

# MOTOR AGE

## Chicago's Woodland Show



CHICAGO, Feb. 5—The annual Chicago show is on, the opening of the big effort of the National Association of Automobile Manufacturers taking place this

afternoon in the usual unostentatious manner which always has marked Sam Miles' efforts in this line, and tonight the Coliseum, the Coliseum annex and the First Regiment armory were jammed to the doors by a well dressed crowd that clearly showed that Chicago is more keenly interested in the motoring situation as it pertains to the manufacture of cars and accessories than ever before. It was not a buying crowd, of course—the first night never does bring out the live ones anyway—but the fact that the common people, as the crowd might be termed, were aroused to such motoring enthusiasm speaks well for the coming year. But it was a puzzled crowd that entered the doors tonight, for the surroundings were entirely different than ever before.

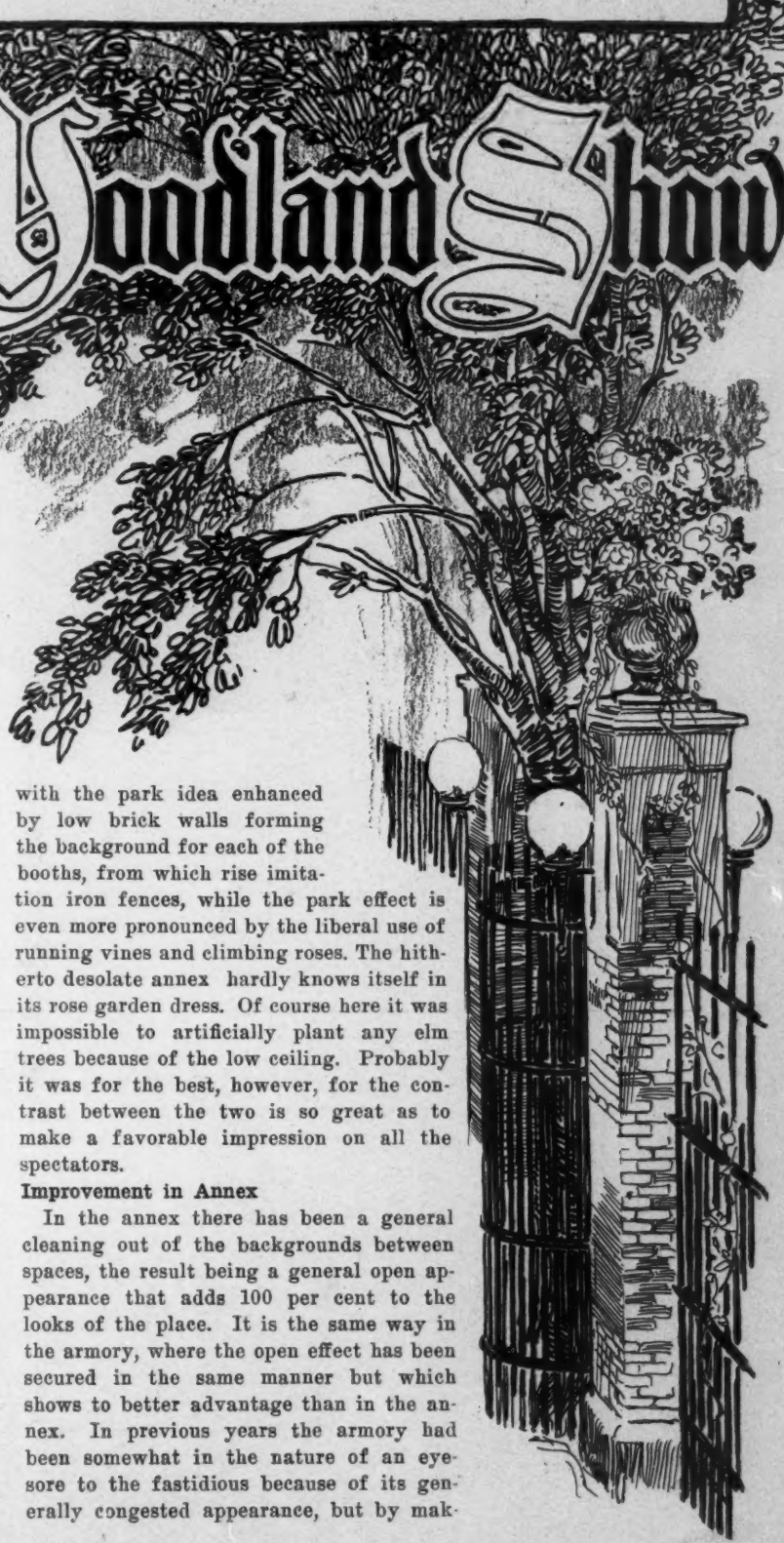
Miles had promised a sensation in the decoration line and he has more than made good. He has thrown into the discard all the staff figures and the yards and yards of oil and water color paintings, and in their places he installed an entirely new lot of decorations in the makings of which old Dame Nature has played a most important part.

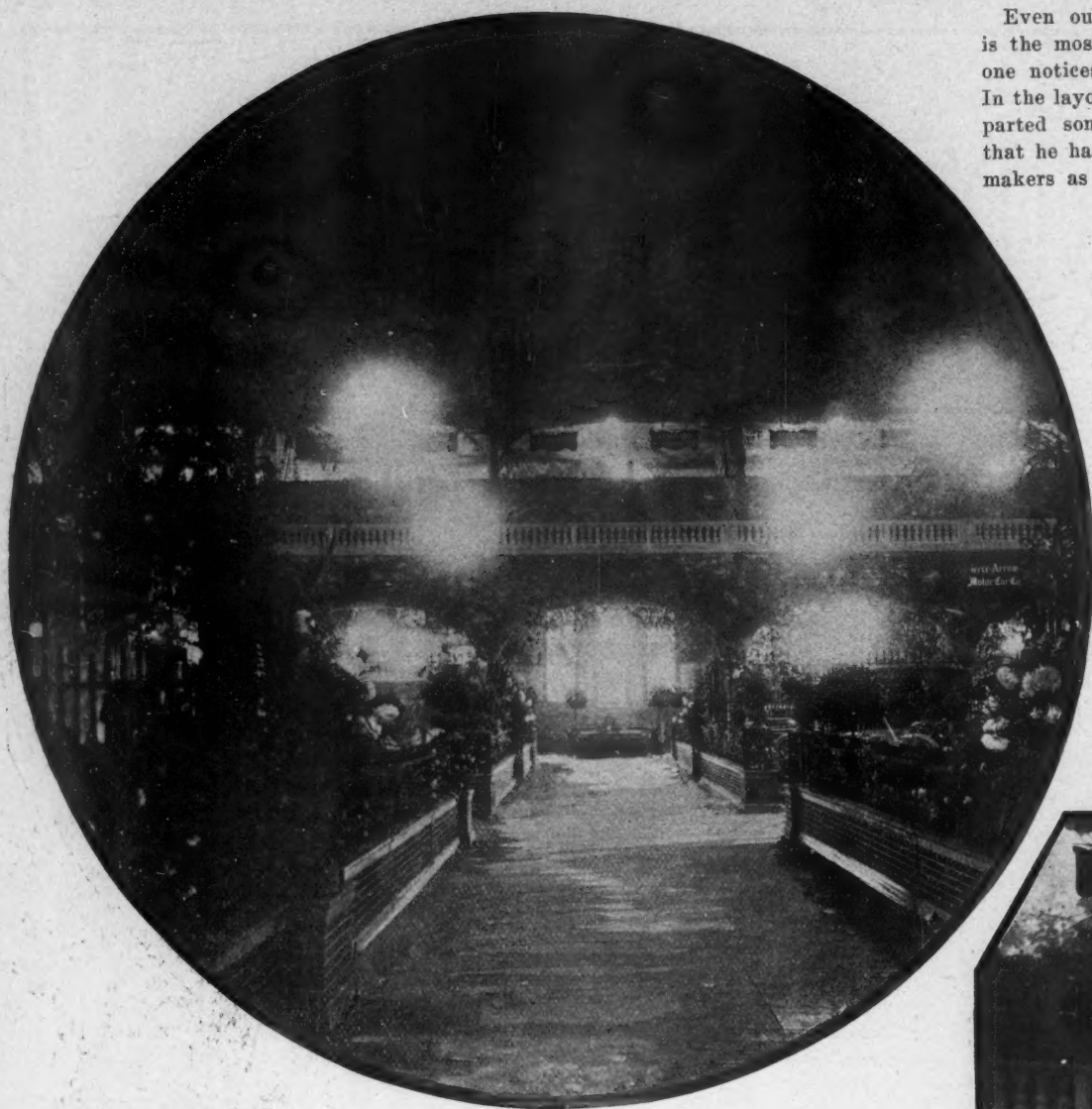
It is just like outdoors in the Coliseum—a big English park, if you please, with gigantic elms towering into the glass-covered dome, with a blue sky above, and

with the park idea enhanced by low brick walls forming the background for each of the booths, from which rise imitation iron fences, while the park effect is even more pronounced by the liberal use of running vines and climbing roses. The hitherto desolate annex hardly knows itself in its rose garden dress. Of course here it was impossible to artificially plant any elm trees because of the low ceiling. Probably it was for the best, however, for the contrast between the two is so great as to make a favorable impression on all the spectators.

### Improvement in Annex

In the annex there has been a general cleaning out of the backgrounds between spaces, the result being a general open appearance that adds 100 per cent to the looks of the place. It is the same way in the armory, where the open effect has been secured in the same manner but which shows to better advantage than in the annex. In previous years the armory had been somewhat in the nature of an eyesore to the fastidious because of its generally congested appearance, but by mak-





MAIN AISLE IN COLISEUM, LOOKING FROM ENTRANCE

ing the main floor into one big unit, by having no separating decorations between booths, and by scattering floral decorations with a liberal hand, the open effect has been secured that makes the building look twice as big as it really is. Even the basement of the annex shows an improvement, if such a thing is possible, through the following out of the same scheme. However, a touch of comedy is added to the situation here by the fact that about half of the exhibitors of cars have the incandescent lighting system on their cars furnishing illumination for the scene.

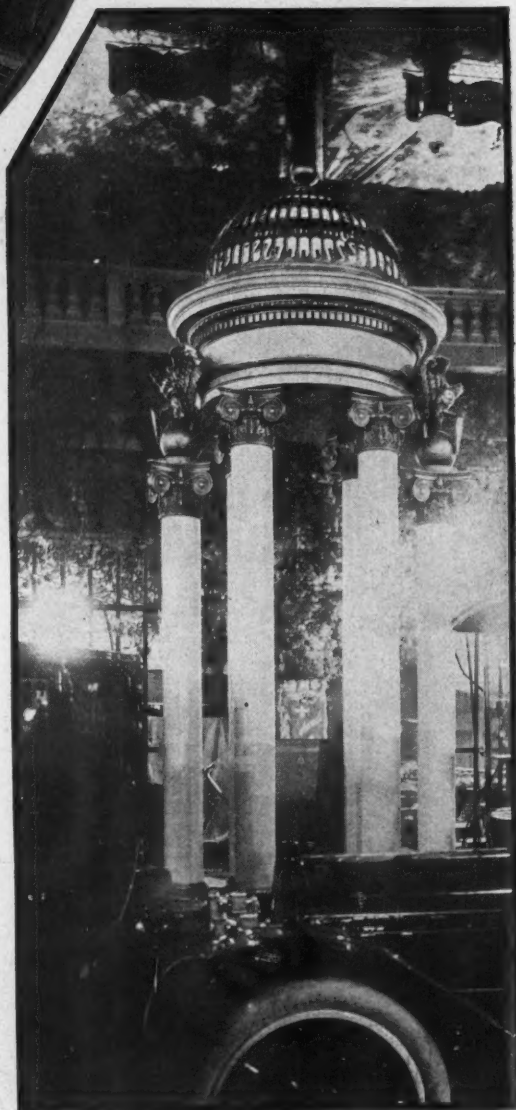
Of course the Coliseum is the heart of the show, and here Manager Miles has put forth his best efforts. His idea is entirely original and most unique, and marks the climax of 10 years of show promotion on the part of the manager of the N. A. A. M. The scheme throughout is that of Henry Thiede, the artist who has been associated with Mr. Miles ever since the latter started running shows, and who conceived the idea from Chicago's beautiful parks. To get the woody flavor it was necessary to import a small forest of elm trees from one of Chicago's north shore suburbs, which was successfully done, there

being a double line of these giants of the forest raising their leafy heads almost up to the imitation blue sky in the dome of the building. They look natural because they are natural, but they are not planted in Mother Earth. It was necessary to saw off the roots, making a flat base into which huge iron rods were run, which were in turn fastened to the floor beneath while above the trees are supported by means of invisible wires.

#### What It Means to Chicago

"What does this mean to Chicago?" asked Walter J. Moody, manager of the Chicago Association of Commerce, at the banquet of the trade association last Friday night, and in reply Sam Miles declared that it meant the attracting to Chicago of 7,000 or 8,000 people, who would be here a week and would spend in the neighborhood of \$1,000,000; it would mean the visit of 2,000 dealers, while this army of outsiders would be added to by attendants in the booths, who would number as many more. Therefore, it would seem that this annual motor car show means much to Chicago, for it is doubtful if any other convention ever produces such big financial returns as does this one.

Even outside of the decoration, which is the most original feature of the show, one notices the change over other years. In the layout of the building Miles has departed somewhat from his old ways, in that he has tried to accommodate the car-makers as far as possible. In doing this he has been obliged to prune down his list of exhibitors so that now, numerically speaking, the show is not as big as in previous years. He has 267 exhibitors on his list, of which 101 are showing cars, but even at that he has been obliged to disappoint many. More than forty car makers and 200 accessory concerns were left out in the cold when the space all had been distributed, despite the fact that Miles did his utmost to accommodate as many as possible. This has resulted in an outside show that is bigger than in previous years. Hardly a store along the row is without a private show, makers who were shut out having rented space from regular deal-

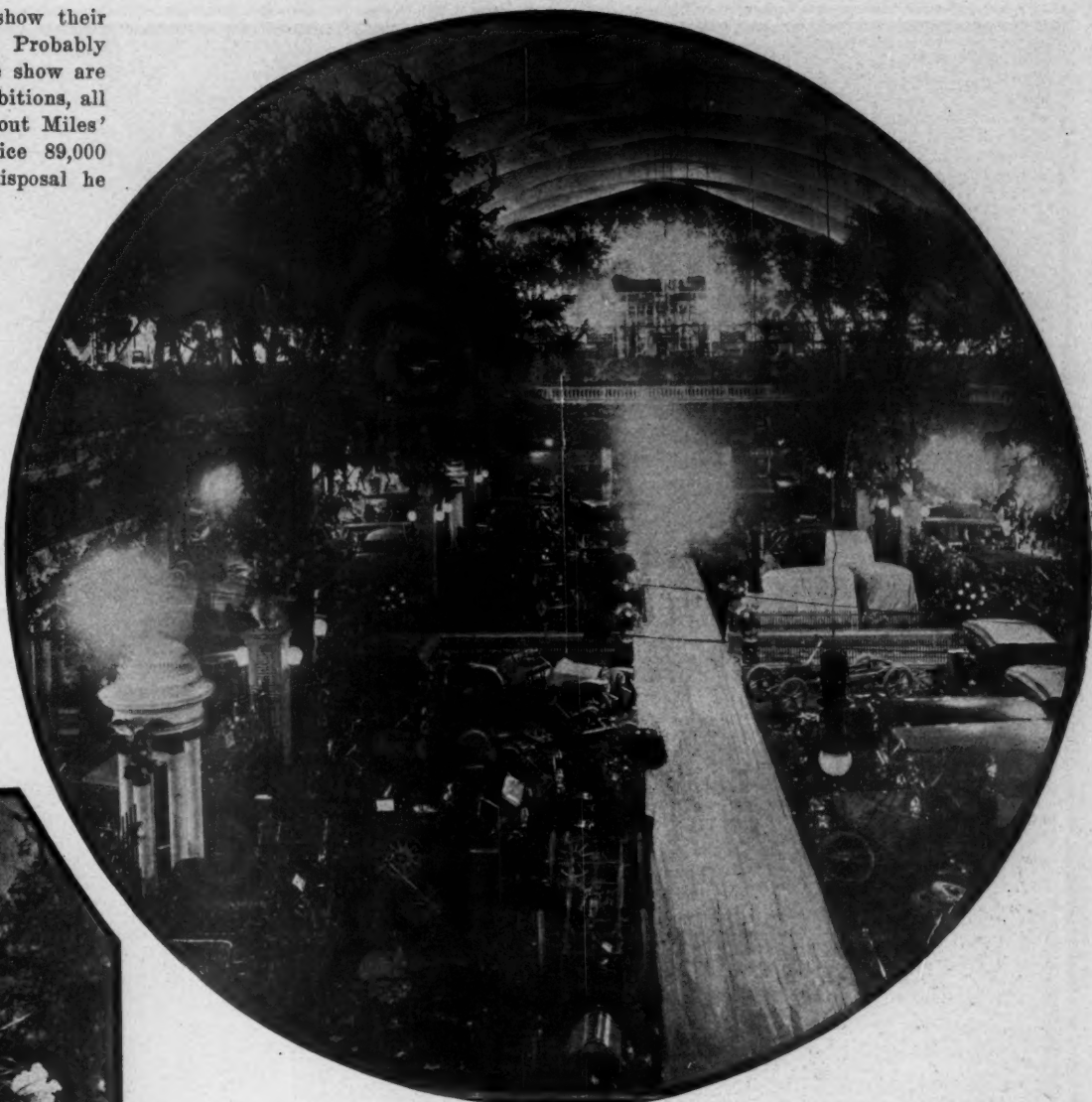


ODD DECORATIVE IDEA DESIGNED BY H. A. THIEDE



ers in order that they might show their goods to the Chicago public. Probably thirty makes of cars not in the show are to be seen in these private exhibitions, all of which would seem to bear out Miles' statement that if he had twice 89,000 square feet of space at his disposal he could use all of it. Numbered among these outsiders are all sorts of concerns—makers of gasoline pleasure cars, electrics and commercial trucks.

An inspection of the exhibition tonight shows a number of points at variance over previous affairs. In the first place the commercial display has been reduced to a minimum, which is rather disappointing in view of the fact that in former years the commercial exhibit was one of Chicago's features. Two years ago it was so large that Manager Miles rented the Seventh Regiment armory solely for the commercial display. However, this did not prove a success, be-



MAIN AISLE OF COLISEUM, NORTH AND SOUTH



A HANDSOME FLOWER POT DECORATION

cause that building was two blocks away from the armory and attracted few exhibitors. This seems to have had a depressing effect upon the commercial car manufacturers, for last year their ranks in the show were so sadly depleted as to arouse marked comment, while this year they are so few of them here they are almost entirely unnoticed. Not more than five or six exhibitions of the commercial proposition are to be seen, and these are so widely scattered that unless one really is looking for some particular display they are hard to find them.

The makers of electrics are about as strongly represented as heretofore, but no attempt has been made to get them together. The Babcock, Baker, Columbia, Rauch & Lang, Woods and Waverley, all prominent in this line, are on view. They furnish nothing new over what was seen in New York, but evidently this type is popular, judging by the crowds of women who flock to these stands. The foreign cars never did have much of a hold on Chicago's affections, and never have been numerically strong enough to attract attention as they do in New York, where the Importers' Automobile Salon takes things

into its own hands and sees that the foreigners have proper representation. Here the foreigners have been located in the armory, where the Fiat, Renault and Berliet are on view—not much of a showing. Outside of the show the Isotta and Panhard are displayed, this being the first time in several years that the Panhard had been seen in Chicago.

#### Display of Motor Cycles

The motor cycles are again with us, and once more have preempted all of the second floor of the Coliseum annex. They do not seem to be as strong in numbers as last year, there being twelve makers of two-wheelers occupying space. But they make a gallant showing, just the same, and despite the fact that they are so far away from the firing line, as it were, they are attracting more attention than at previous shows.

Only one body-making concern is in the show, and that one is located in the armory, where C. P. Kimball & Co. have a Fiat chassis fitted with a luxurious body of the combination type, which permits it of being opened or closed at the will of the owner. Few new ideas of the body line are noted among the cars on view.



GENERAL VIEW OF THE COLISEUM, LOOKING SOUTH AND GIVING A SPLENDID IDEA OF THE DECORATIVE IDEA USED IN DRESSING

The Knox people show a six-cylinder with a torpedo-type body, whereas in New York they had the same idea applied to a four-cylinder. The Inter-State has a new offering in this line, while the Kisselkar and Mora promise something later on in the week.

So far as could be seen the first night, there are only three racing cars in the show. The Alco that won the Vanderbilt cup race and with it, of course, the Vanderbilt cup, are on view at the stand of the American Locomotive Co. Thomas has the famous car that won the New York to Paris race, while in the Chalmers' stand is the racing Bluebird that won the Indiana trophy, which is interesting to Chicagoans because the Indiana trophy race was a local enterprise.

If anything the display of motoring trophies is greater than ever before, but there is no collection of cups such as was the case in the Madison Square garden. As mentioned before, the Vanderbilt cup is in the Alco stand, and the New York-Paris trophy at the Thomas'. The Apper-

son shows the Santa Monica and Portola trophies, won by the Jackrabbit, which is the first time the people of the middle west have had a chance to inspect these famous California trophies. Knox has a choice collection of hill-climbing and reliability cups, which make a brave showing, while the Chadwick offering is a notable one. Chalmers has the big line of cups and medals which the Bluebird has won. The Buick, which has a small fortune tied up in these emblems of motoring superiority, contents itself with showing the trophies in its local salesroom.

#### Car Count First Night

A count hastily taken tonight shows there are 266 cars on view, and at the same time one notes that there are many new faces among the exhibitors. Here for the first time are the Flanders, Hudson, Everitt, Ohio, Clark, Fuller, Cole, Lexington, Lion, Metz, Monitor and Springfield, while several others might be classed as new because in previous years they were here in motor buggy form. Numbered among these recruits from the ranks of

the high-wheelers are the McIntyre, Staver, Black, Fuller, Schacht, Zimmerman and Richmond. The motor buggy itself has been cast completely into the background, it would seem, which is a surprising fact, because Chicago always has been regarded as a home for the motor buggy. However, the recent failure of the Holsman company was a hard blow to this branch of the industry, and so tonight sees a startling scarcity of motor buggies. A trip through the three buildings tonight failed to disclose more than one high-wheeler, that being found in the Zimmerman booth, where, however, it is somewhat lost sight of in the presence in the stand of several models of low-wheelers.

There are fewer makers who showed at neither of the New York affairs, whereas in previous years Chicago always could be counted to have something different from its eastern rivals. This time the list of those who did not show in New York and who are here include Rambler, R. A. C., Auburn, Austin, Berliet, Dorris, Richmond, Lexington, Great Western, Springfield,





UP THE BIG BUILDING IN ITS WOODLAND GARB FOR THE SHOW OF THE NATIONAL ASSOCIATION OF AUTOMOBILE MANUFACTURERS

Rider-Lewis, Fuller, Monitor, Clark, Diamond T and Zimmerman.

#### Leaders Slow Coming

Also it is noted that there were fewer of the big people in the trade here for the opening night than ever before. Everybody seems to be so busy at the factories that they have put off coming until next week, when many of those prominent in the industry are expected to arrive. This delay in getting here probably is explained by the fact that there are so many important meetings scheduled for the latter part of the week that the big men could not afford the time to get here the first night. That they will have a lot to do when they do arrive is certain, because important action will be taken at the meetings of the American Motor Car Manufacturers' Association, the N. A. A. M. and A. A. A. It is thought that the session of the independents will result in the dissolution of the A. M. C. M. A. Indeed there are few who have any hope of maintaining the organization, it being conceded that

the Hough decision in the Selden case, the flocking over to the A. L. A. M. of so many of the independents, and the change that Alfred Reeves made from the managership of the A. M. C. M. A. to that of the A. L. A. M. means the death of the independent organization.

While the executive committee of the Association of Licensed Automobile Manufacturers is billed to hold a meeting it is hardly possible anything startling will be given out. The Seldenites, however, are singularly active and while they are keeping quiet they are working hard to take full advantage of the decision of Judge Hough. It is whispered around tonight among those close to the A. L. A. M. leaders that the association is about ready to fire its opening shot against those makers who do not use the Selden tag. It is not because many of the outsiders do not desire to do this, but because to many of them the A. L. A. M. is like a Sphinx, refusing to hear the raps for admission. It is said that the association now numbers seventy-one makers, the latest to be ad-

mitted being the Oakland pleasure car and the Reliance and Randolph trucks. It may be others will be let in before the end of the week, but if there are any more recruits they will be few in numbers.

A point about this silent warfare that is puzzling the outsiders is the attitude of the A. L. A. M. toward the importers. So far only two have been granted licenses—the Lancia and the Delaunay-Belleville—while other foreigners still are without the fold—Fiat, Renault, Isotta and other big ones. It is probable several of these would like to get in and indeed it is hinted that more than one has asked, but so far the ring at the A. L. A. M. front door has failed to bring any response.

#### New Dealers' Body Probable

There is some talk of a movement being started in Chicago looking toward the organization of a local dealers' association for agents of licensed cars only, similar to the one that was started in New York recently. It is probable something more along this line will develop later.

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## A Chassis Show

SINCE lack of space for a proper motor car exhibition in many of the big American cities has become so important a question, a possible solution to the difficulty might be found in a chassis show. This would be a meritorious novelty in that it would demonstrate the advance of the industry. Five years ago the chassis was an unknown quantity at a show, and in those days the body was the selling factor. As years passed buyers became more interested in the chassis, with a result that all the makers found it imperative to exhibit one or more chassis. Then followed the polished chassis era, which is at its zenith at the present time. In a chassis exhibition it would be possible to have every manufacturer in the country represented, and many of the larger makers would be able to exhibit two or three chassis, according to the number of models manufactured. With a chassis exposition of this nature the public would have one of the best opportunities of studying the motor car of today. As it is, the majority of buyers are much more interested in the chassis design and details of construction than they are in the different body types.

A chassis exposition of this nature would not make it impossible for any manufacturer to exhibit his body types, in that his demonstrator could be a representative touring car or limousine, and the other body designs could be seen in the regular selling rooms of the company. Another suggestion would be that the exposition of the chassis could continue for the first 4 days of the week, and for the last 2 special types of inclosed bodies or other novelties in body designs exhibited. It appears rational that an exposition of this nature would be more satisfactory to the general masses, in spite of a little inconvenience which it might cause. Next year it will be impossible for all of the A. L. A. M. members to exhibit in any one building in New York or Chicago, and the dividing of them into classes for two shows will not be a success.

## Chicago National Show

ONCE more Chicago has demonstrated its superiority in the matter of show decorations and Manager Miles of the Coliseum is to be congratulated on the excellent scheme of decoration which is carried out so effectively in the Coliseum, the Coliseum annex and the armory. The decorations this year are "back to nature," as the exhibitors have come to style them. In the early days of motor car shows the decorations were not considered factors, but today they serve a useful purpose in that they are instrumental in bringing many visitors to the show who might not come were the cars the only attractions. This class may be designated the curiosity brigade, but, as it often happened at previous shows, those who went with little intention of buying became interested sooner or later about their first car.

THE Chicago show is maintaining its reputation as an agency proposition, although the number of agencies placed up to the present is nothing to compare with that of previous years due to the fact that many manufacturers retain their agency force from year to year. There have, however, been many new cars brought out within the last 6 months, and in every case these are placing agencies during the present show. The agency proposition is not limited solely to the show within the Coliseum and armory, but is being carried on aggressively by those concerns who were not fortunate enough to get exhibit space and are now conducting private displays in the vicinity of the Coliseum. This agency factor has always been a dominant one in the Chicago show field. Agents from California to Texas come to Chicago for the show, many of them bringing with them not a few prospective buyers who have delayed placing their orders until such time as they had an opportunity of inspecting the different models, which opportunity the present show affords. Viewing the value of the Chicago show from this vantage point it would seem that the show could be held somewhat earlier to advantage. This is largely due to the fact that manufacturers are now getting their new models out in July and August and that by October nearly all of their agents are furnished with demonstrators. Compare this with the condition of affairs 3 years ago when several manufacturers had difficulty getting their new models ready by the new year and the reason will be at once apparent why a show about the middle of January would be more valuable to Chicago and the west.

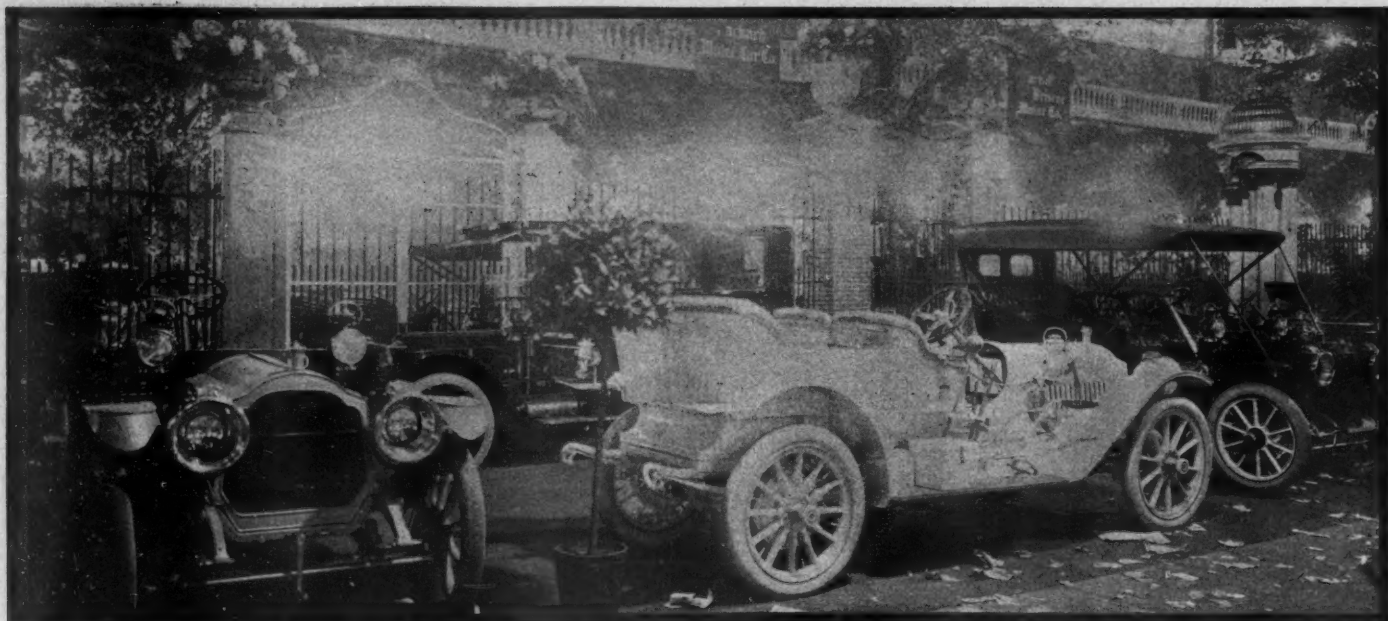
IT is somewhat regrettable that owing to the lack of space the commercial exhibit has been reduced to a minimum. Two years ago, a separate exhibit of commercial cars was given during show week in the Seventh Regiment armory. Since that time, however, the management has decided that separate commercial shows are not a success and as a result the business car has been crowded off the scene. This state of affairs tends to put the commercial field in a poor light before the buyers and it would not be at all doubtful if in a couple of seasons Chicago would be conducting a commercial show of its own. The advancement of the commercial phase of motoring demands this and it is peculiar why the business end has not been better looked after when the immense latitude of it is grasped. It is an accepted fact that should the pleasure end lose any of its halcyon aspect many of the makers would turn their attention to the commercial car; and granted that this is true, it would only be reasonable to expect that these same manufacturers would show sufficient foresight at the present time to cultivate this end of the industry.

THE matter of lack of space in order to let the scores of reputable makers exhibit naturally suggests the problem of reducing the space allotted to the different concerns. In the present arrangement there are some concerns which have more than enough room, in fact they could do with just half of what they have. If there had been a more general reduction of the space given to makers and more permitted to exhibit it would have had a beneficial effect. At present there are enough outside exhibitors to form a second show, and if the industry continues at its present pace inside of another year this number will have increased. Viewing the 1911 situation in this light it would seem that 2 weeks of show would be necessary in which one-half exhibit one week and the other half the following.



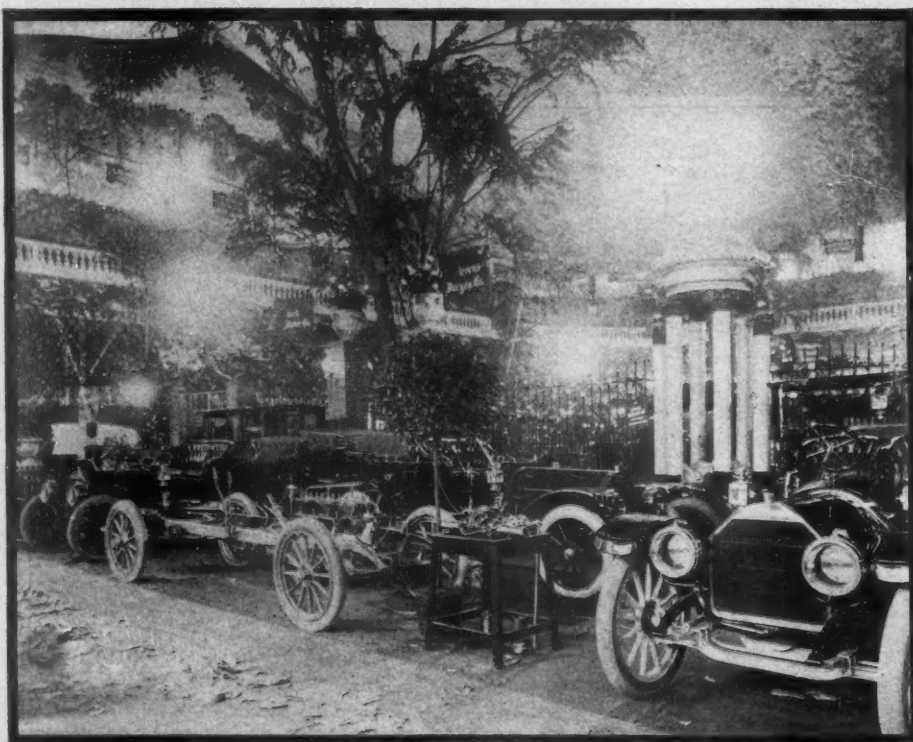


The Vicissitudes of Time

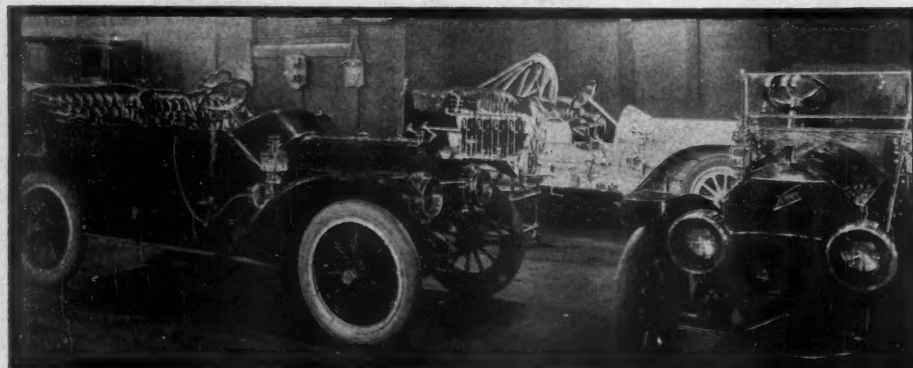


CORNER STAND OF THE PACKARD, IN WHICH ARE DISPLAYED SEVERAL CLEVER BODY IDEAS

## News Angles of Show—Passing of A. M. C. M. A.



STEVENS-DURYEA STAND WITH CHASSIS OF NEW MODEL



KNOX UNDER BALCONY, TORPEDO SIX IN FOREGROUND

### Independent Organization Is Dissolved at Chicago, and the \$60,000 Surplus Split Up

CHICAGO, Feb. 8—As was expected when Alfred Reeves resigned his position as general manager of the independents to accept the same sort of a job with the A. L. A. M., the American Motor Car Manufacturers' Association today quietly cashed in its chips and became a matter of history through the dissolution of the organization. The annual meeting of the A. M. C. M. A. was held today in the New Southern hotel and it proved to be the last session of the independents. The 5-year agreement which was passed at the time the body was formed expired today, and as the leaders almost to a man had joined the A. L. A. M. it seemed useless to continue.

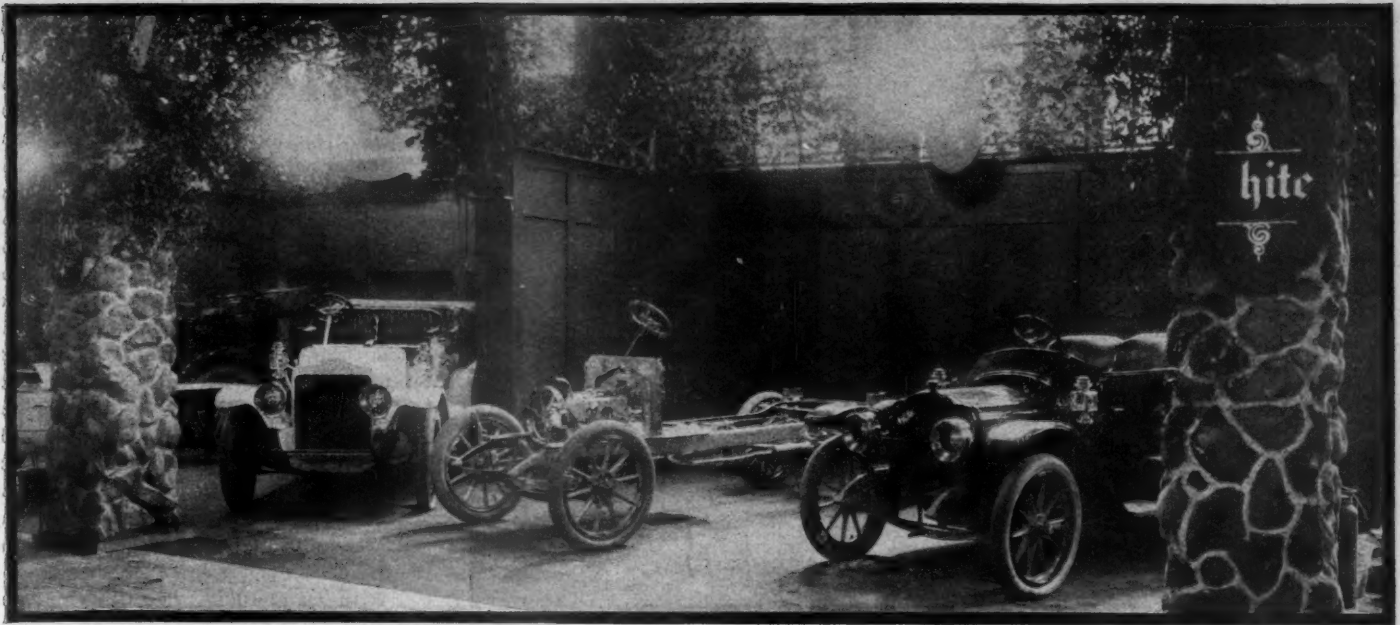
This was not the only business of the meeting, however. The manufacturers voted to award tokens of esteem and appreciation to Chairman H. O. Smith, Former Manager Reeves and Job Hedges, the counsel for the A. M. C. M. A. This took the form of a gold watch in the case of Chairman Smith, while other tokens will be given to Reeves and Hedges. Another interesting factor was the decision to distribute the surplus in the treasury which amounts to \$60,000.

After arranging to close the affairs of the association, unanimous support was given to the following resolution:

Resolved, That the American Motor Car Manufacturers' Association hereby expresses its high appreciation of the management of the Chicago show for 1910; for the completeness of the arrangements and the artistic and practical features which contribute so freely to the success of the exhibitors.

The association was formed in Chicago in 1905 and has had an unusually successful career, being responsible for the big annual show at the palace in New York.





WHITE STAND WITH ITS VARIOUS TYPES OF GASOLINE AND STEAM CARS

## Speare Praises the West—Contest Rules Filed

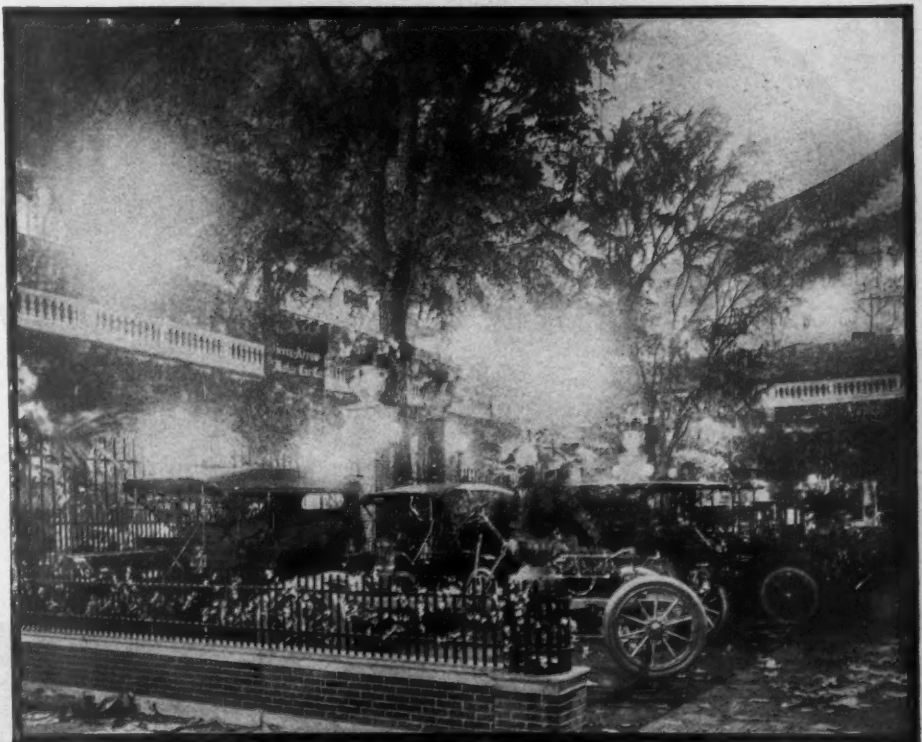
### Quarterly Session of American Automobile Association Board of Directors Held in Chicago

**C**HICAGO, Feb. 8—In his address to the board of directors of the American Automobile Association, at the quarterly meeting held this afternoon at the First Regiment armory, President L. R. Speare concisely stated why the first session of the year was held in a mid-west city. In the course of his remarks, the head of the national organization said:

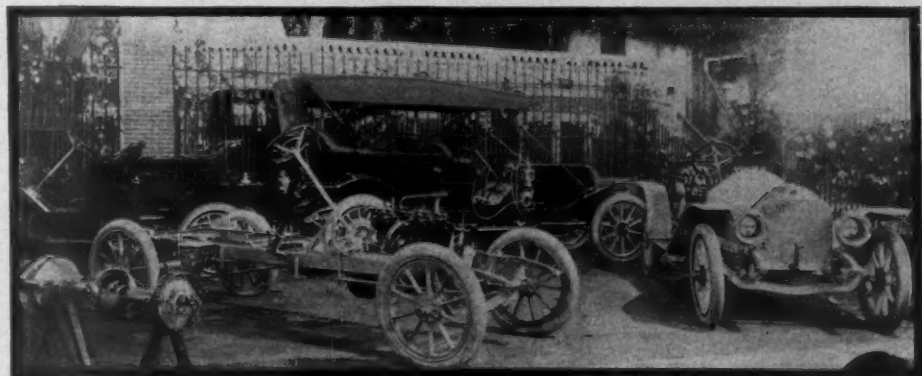
"While it is true that eastern states first took to motoring, due to the fact that nearly all of the early cars were European importations, the real strength of this great industry has moved westward, not only in the making of the vehicles themselves, but also in their widespread use and the yet undeveloped possibilities of the immediate future.

"Perhaps I am an exceptional optimist on the subject of the motor car, having been one of its pioneer users, but I look forward to the day when every man will have his own car, suited to his particular needs, and within the limits of his financial ability. This would call for an economical car for the man of moderate means, and, of course, larger cars for the well-to-do class which first came to regard the motor-driven vehicle as a pleasurable necessity.

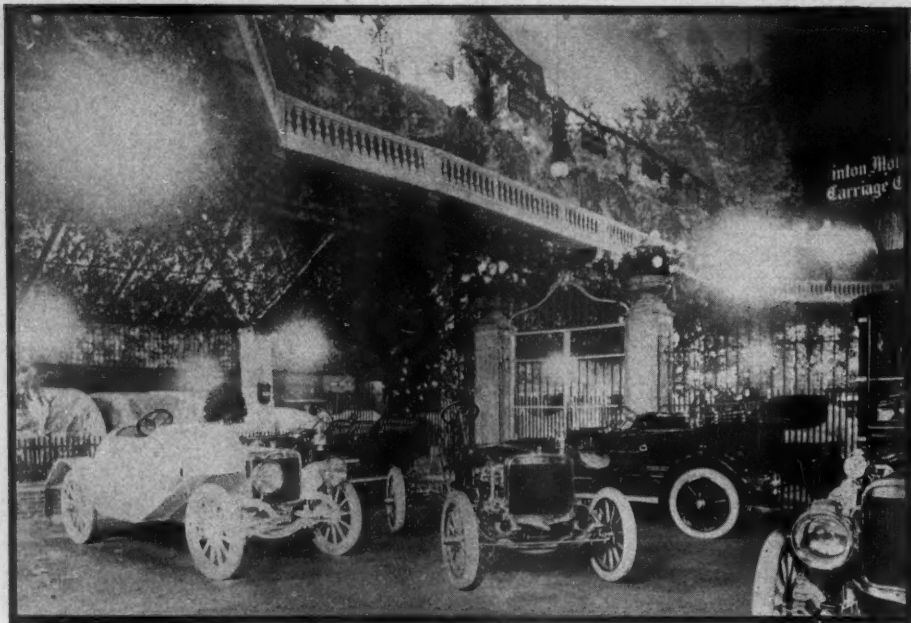
"It is a natural sequence that when the farmer buys a motor car, he becomes a persistent advocate of good roads, and it is equally true that good roads increase the number of motor car users. This highway improvement work is scarcely under full headway, and it is no longer a question of the general recognition of the value of improved highways. Now it is a problem of where to obtain the money with which to build, and, after the funds are obtained, to



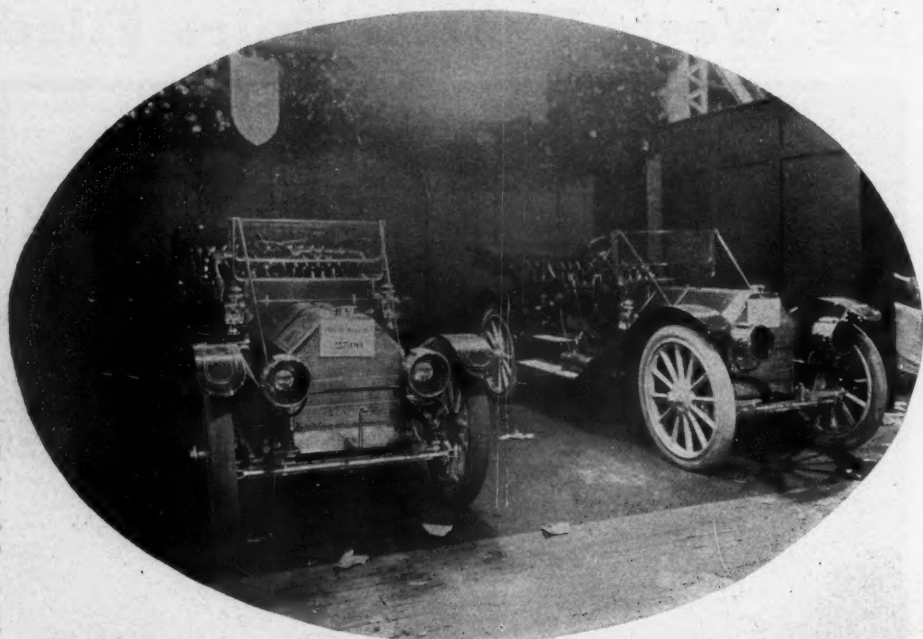
PIERCE-ARROW IS IN ONE OF THE MOST PROMINENT STANDS IN COLISEUM



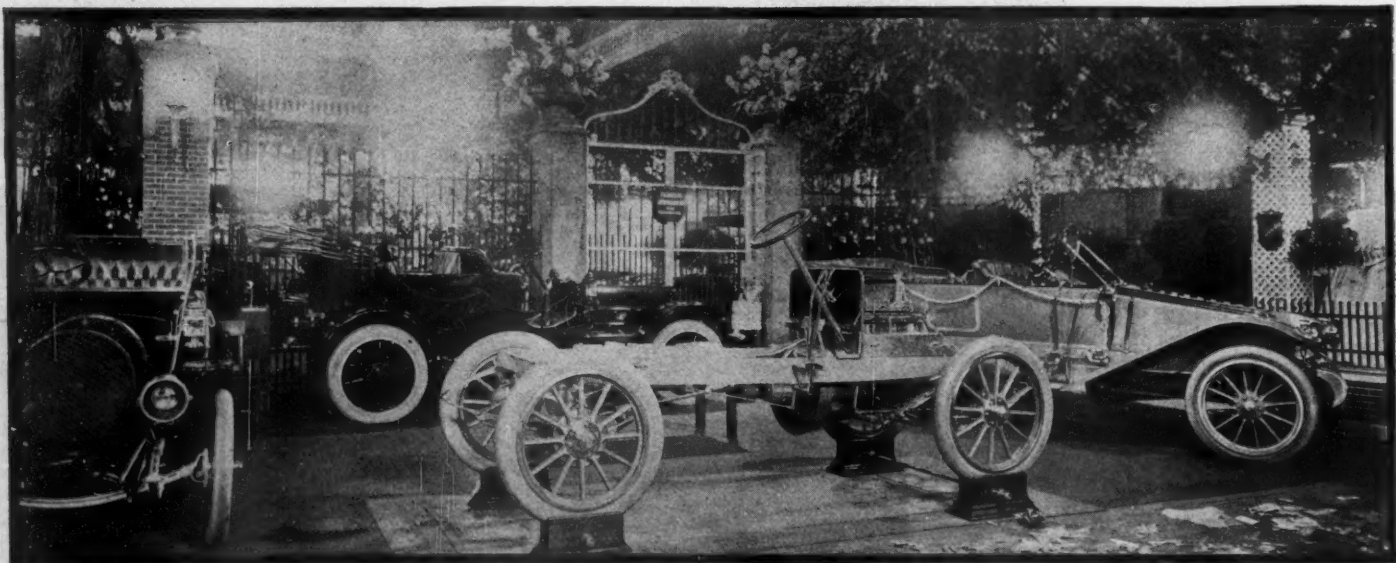
PREMIER, ACROSS-THE-AISLE NEIGHBOR OF THE PIERCE-ARROW



WINTON TORPEDO ROADSTER IS THE ATTRACTION HERE



GLIDE SHOWS TWO MODELS, BOTH TOURING CARS



FRANKLIN STAND WITH ITS ATTRACTIVE CHASSIS AND ITS TORPEDO SIX

know what kind of road to supply for the modern method of individual transportation. The road experts are studying the situation in every detail, and the up-to-date construction indicates that the final solution is not far distant.

"In the introductory use of any new method of travel, there are bound to be inconveniences and inconsistencies in the framing of an adequate law. It takes time to reach a satisfactory understanding between the general public and the man who drives the car, and when they become better acquainted, and each realizes the rights of the other, the lessening hostility which is now apparent will quickly disappear. It is still decidedly essential that the motorists keep well organized in order to speak with one voice in discussing and agreeing upon the unifying of regulations governing the use of the motor car.

"With road-building in full swing, and the laws practically definitely fixed upon, comes the systematic furtherance of touring; and the western country offers unlimited possibilities in this field, for every man owning a motor car, at some time during the year, wants to make a prolonged journey, and frequently several of these long-distance trips.

"To my way of thinking, the motor car has done more to make people acquainted with their own country and to broaden their minds, than any other blessing which has come to mankind since the establishment of these United States."

President Speare, of Massachusetts, presided at the session and the others present included: Ralph W. Smith, president of the Colorado State Automobile Association; M. C. Moore, president, and James T. Drought, secretary of the Wisconsin State Automobile Association; E. J. Bochannon, Kentucky State Automobile Association; Charles P. Root, president Illinois State Association; John Wilson, Pennsylvania Motor Federation; S. M. Butler, New York, chairman contest board; A. G. Batchelder, New Jersey, chairman executive commit-



tee; S. A. Miles, N. A. A. M.; Alfred Reeves, A. L. A. M.

The following resolution concerning the death of John Farson was adopted after several had spoken of his untiring motor-ing activities:

Resolved, That in the death of John Farson this association and motorists generally have lost a pioneer who was ever a staunch friend in contending for the rights which belong to motorists, as well as to other users of the highways.

Furthermore, it is herewith expressed, that his occupancy of the presidency of the American Automobile Association in 1906 assisted materially in broadening this association into a national body in reality as well as in name.

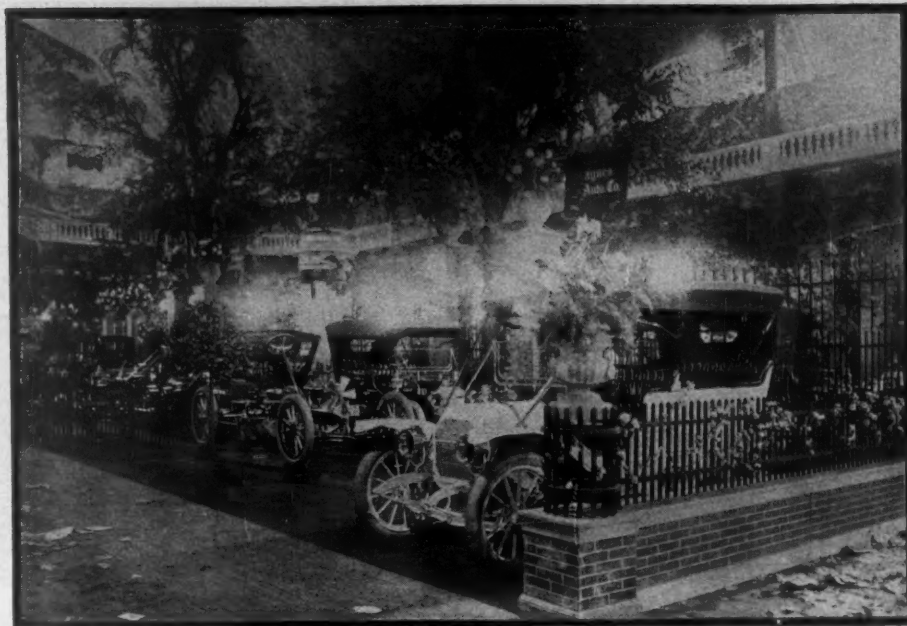
His demise is a distinct loss to motorists generally, and particularly to the Chicago Automobile Club, for he aided greatly in the advancement of the pastime from the standpoint of the owners of motor-driven vehicles.

Discussion of the federal registration bill brought forth the expression of opinion that the measure stands an excellent chance of passage at the present session of Congress, providing the various state associations and 240 clubs scattered throughout the country exert all their efforts at the time of the national legislative convention of the A. A. A. to be held at Washington.

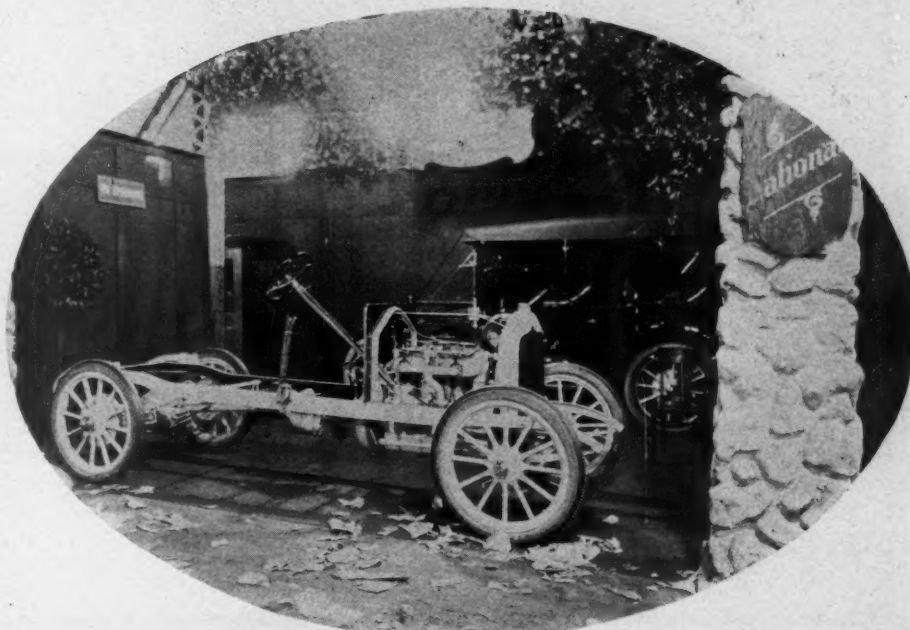
Delegates, guests and visitors in attendance at the convention will assemble at the convention headquarters in the New Willard at 10 o'clock Thursday forenoon to proceed in a body to the capitol where a hearing will be given by the committee on interstate and foreign commerce at an hour to be announced during the afternoon session of Wednesday. Secretary Elliott told the meeting today Senator Chauncey M. Depew will deliver the address of welcome at the opening of the legislative convention.

Secretary Elliott's report indicated that the thirty-three state associations of the national organization would soon be increased by additions from Florida, Oregon, Tennessee and North Carolina.

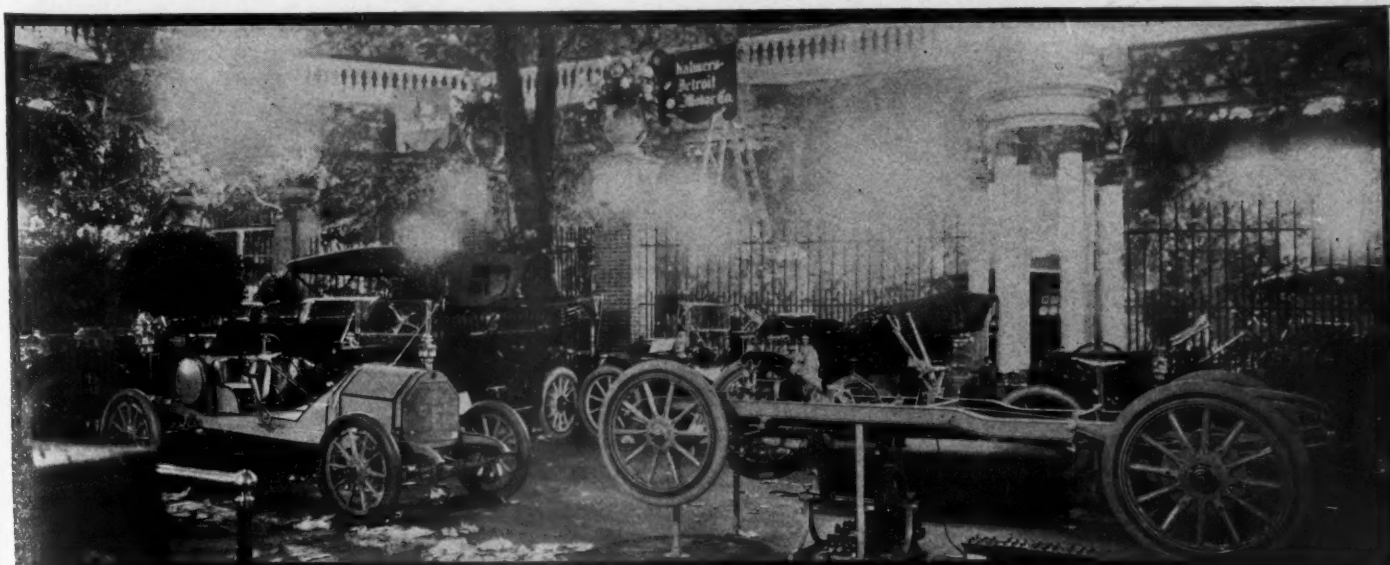
Chairman Butler, of the contest board, reported that the rules for 1910 had been completed and were subject to the action of the board of directors. Upon motion the revised rules were referred to a sub-committee of the board.



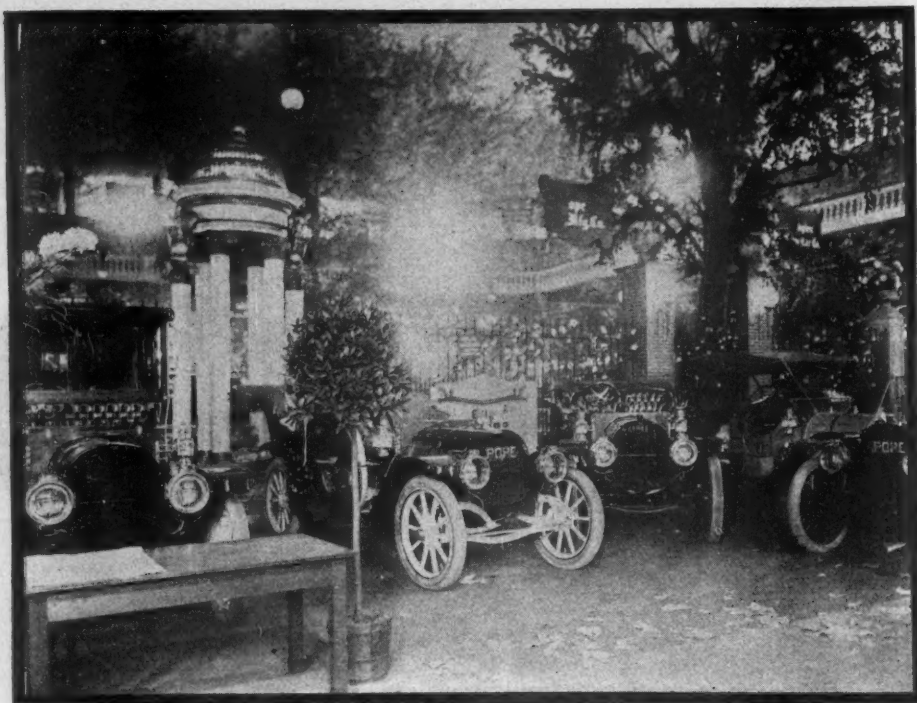
HAYNES ON ONE OF THE BIG CORNERS IN THE COLISEUM



NATIONAL, ONE OF THOSE SHOWING A CHASSIS



CUT-OUT CHASSIS WITH A CORPS OF LECTURERS ATTRACTS SPECTATORS TO CHALMERS STAND



## The A. L. A. M. Springs

**C**HICAGO, Feb. 8—The Association of Licensed Automobile Manufacturers sprang a sensation this morning when there appeared in the daily newspapers a half-page advertisement bearing the official signature of the Selden organization, which advertisement was declared to be "published for the protection of motor car buyers." The A. L. A. M. referred to the Hough decision and pointed out what it believed to be the salient points in this contention.

The advertisement was most carefully worded and evidently had been prepared either by a lawyer or edited by one with considerable legal training. Accompanying this advertisement and at the bottom of it and preceding the signature was a list of the cars which have been licensed to use the Selden patent. This list shows three new names since the last official announcement of the A. L. A. M., the latest being the Oakland pleasure car and the Reliance and Randolph trucks. There have been no additions to the list of foreign licensees, the Lancia and Delaunay-Belleville being the only ones recognized so far. The advertisement reads:

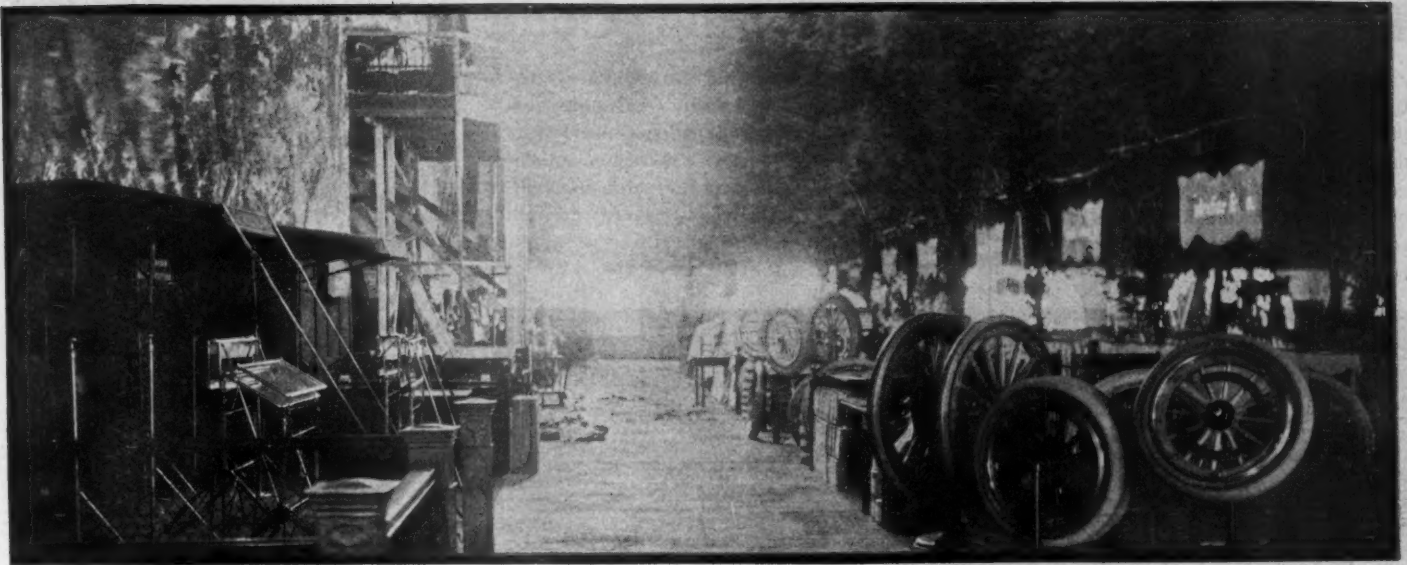
This advertisement is published for the protection of motor car buyers. United States patent No. 549,160, granted November 5, 1895, has been held by Judge Hough, of the United States circuit court for the southern district of New York, to be valid and to cover the modern gasoline motor car. This patent is known to the public as the Selden patent. Licenses have been granted under this patent to manufacturers and importers of seventy-one makes of gasoline motor cars, the names of which are given below.

Suits may be brought under this patent for infringement by manufacturers, by dealers, or by users of pleasure or commercial gasoline motor cars, and it is the intention of the owners of this patent to protect the exclusive rights secured by it to those who have become licensees by commencing suits against infringers of it.

The Selden patent is a basic patent. It is recognized by nearly all reputable motor car manufacturers, and its basic character as well as its validity has been established by the court, and therefore the manufacture, sale or

TOP—ACCESSORIES IN COLISEUM  
MIDDLE—POPE-HARTFORD BOOTH  
BOTTOM—WOODS ELECTRIC BOOTH





## Sensation at Chicago

use of any pleasure or commercial gasoline motor car by any person not licensed under this patent is unlawful and an infringement of this patent.

It is clearly the duty of every law-abiding American citizen to respect the exclusive rights secured by the patent, as it is a duty to respect any other valid patent, and to co-operate in upholding it, as it secures to the owners and licensees under it exclusive rights authorized by the constitution of the United States and by law.

The Association of Licensed Automobile Manufacturers stands for much more than merely the recognition of the Selden patent. Its members individually and through their combined efforts in the association are chiefly responsible for the development of the motor car to its present perfected state.

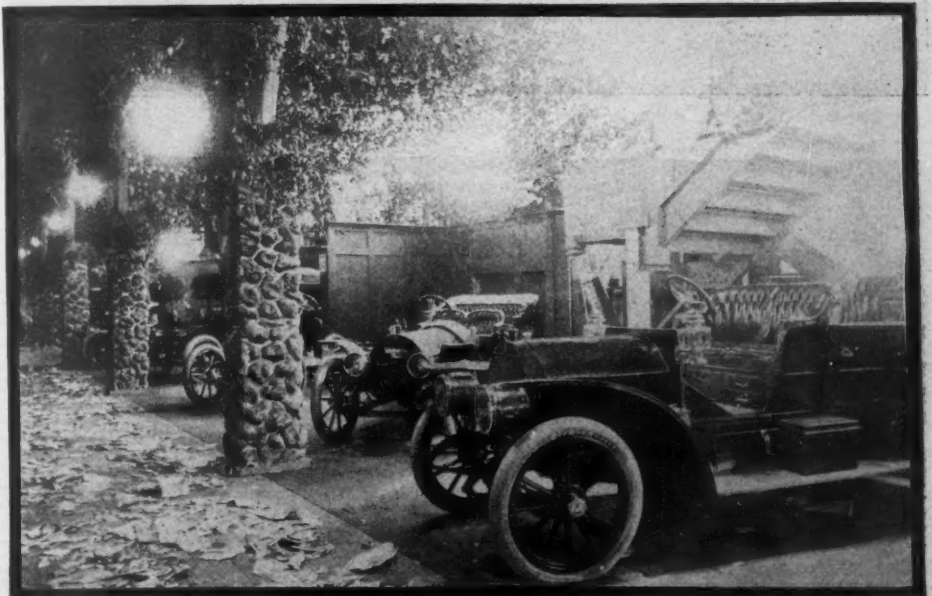
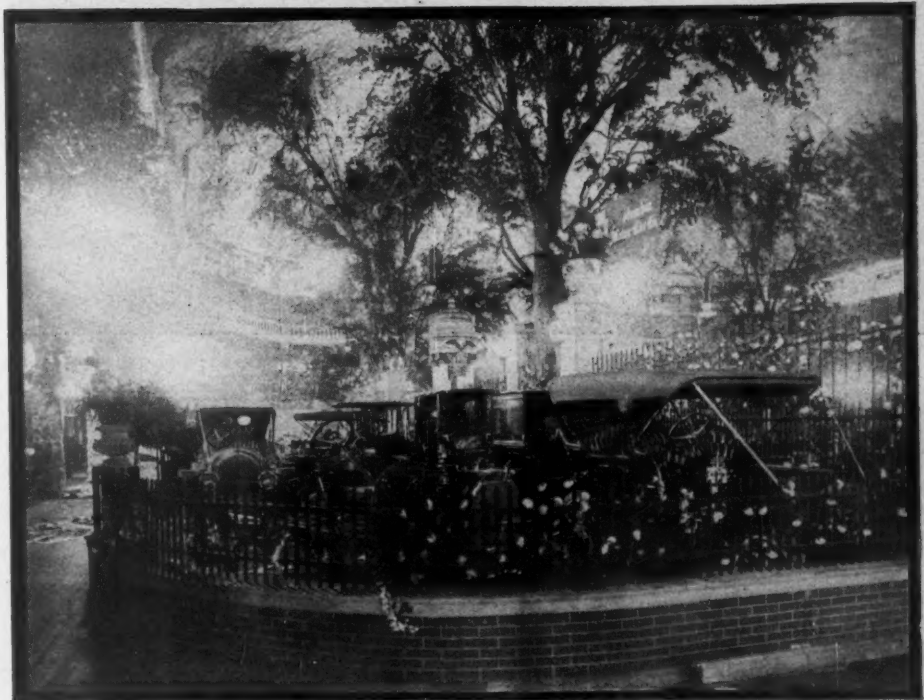
There is no reason why anyone who is buying a car should not buy a car licensed under the Selden patent. The licensees build cars of all classes and for all prices, so that there is scope among licensed cars for the satisfaction of every taste and every purse.

It has been the steadily maintained policy of those who own and control the Selden patent not to extend the protection of it to any manufacturer who does not give the public good value for the money asked, and protection would be withdrawn from any manufacturer who willfully marketed a dishonest car. It has not been the policy to extend protection under the Selden patent to new and untried or doubtful products.

The licensees under the Selden patent have been and are now leaders in the production of medium, low and high-priced cars. They have produced, year by year, better cars for the same money, and often better cars for less money, than have been produced by manufacturers who are not licensees. They compete with each other in quality and price exactly as they do with those who have no license.

Purchasers should not take any chances by buying unlicensed cars. By purchasing licensed cars they are protected by the Selden patent and avoid the risk of litigation for infringement of that patent.

This announcement is made so that buyers of motor cars may know the facts and be governed accordingly. Cars licensed under Selden patent: Acme, Alco, American, Apperson, Autocar, Brush, Buick, Cadillac, Cartecar, Chalmers, Columbia, Corbin, Dorris, E-M-F, Elmore, Everitt, Ewing taxicab, Flanders, Franklin, Fuller, Glide, Grabowsky truck, Haynes, Hewitt truck, Hudson, Hupmobile, Jackson, Knox, Lambert, Locomobile, Lozier, Mack truck, Marmon, Matheson, Maxwell, Mercer, Mitchell, Moline, Moon, Mora, National, Oakland, Oldsmobile, Overland, Packard, Palmer-Singer, Peerless, Pierce-Arrow, Pierce-Randolph, Pope-Hartford, Premier, Pullman, Randolph truck, Rapid truck, Regal, Reliance truck, Reo, Royal Tourist, Sampson truck, Selden, Simplex, Stearns, Stevens-Duryea, Stoddard-Dayton, Studebaker, Thomas, White and Winton. Foreign cars—Delaunay-Belleville and Lancia.



TOP—ACCESSORIES IN COLISEUM

MIDDLE—COLUMBIA STAND

BOTTOM—MATHESON STAND

## Rule-Makers Work on New Code

**C**HICAGO, Feb. 9—That the new contest board of the American Automobile Association and the rules committee of the Manufacturers' Contest Association are both determined to whip the 1910 rules into shape and also get a line on the car classification for 1911 was evidenced at a joint meeting of these boards today, when

Chairman Butler and David Beecroft of the contest board met Chairman Coffin and Messrs. Riker, Apperson, Kelsey and Weidley of the Manufacturers' Contest Association went over the rules. The first order of business was a careful criticism of the contest rules governing this year, and in which the status of the stock car

and stock chassis was gone into, and a little trimming done so that it will be much more difficult for the rule-breakers this year to pick flaws in the definitions. Not only was much concern shown in defining as clearly as it is possible to do the stock car and stock chassis but the minutest details in connection with each were gone into in a searching manner. Nothing definite will be announced for the present, but when the announcements are finally made the critics will have their troubles.

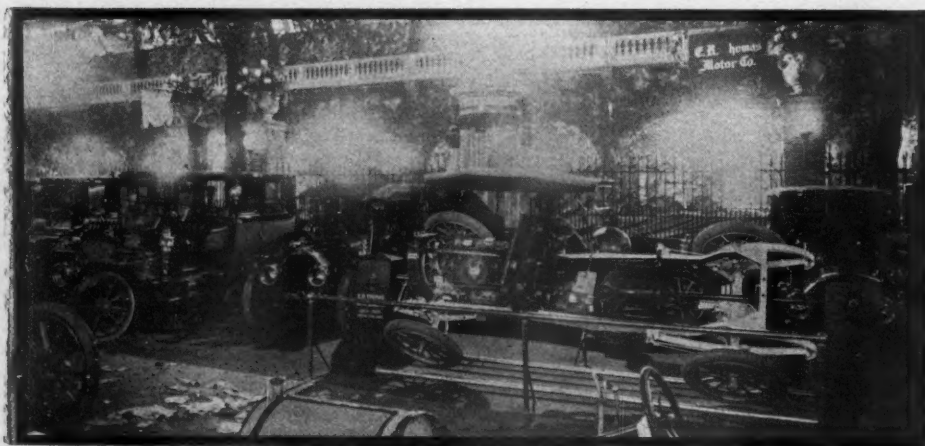
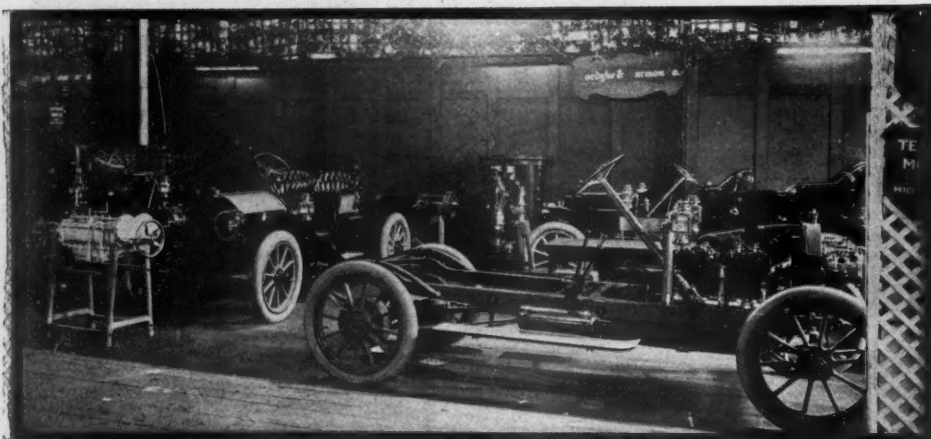
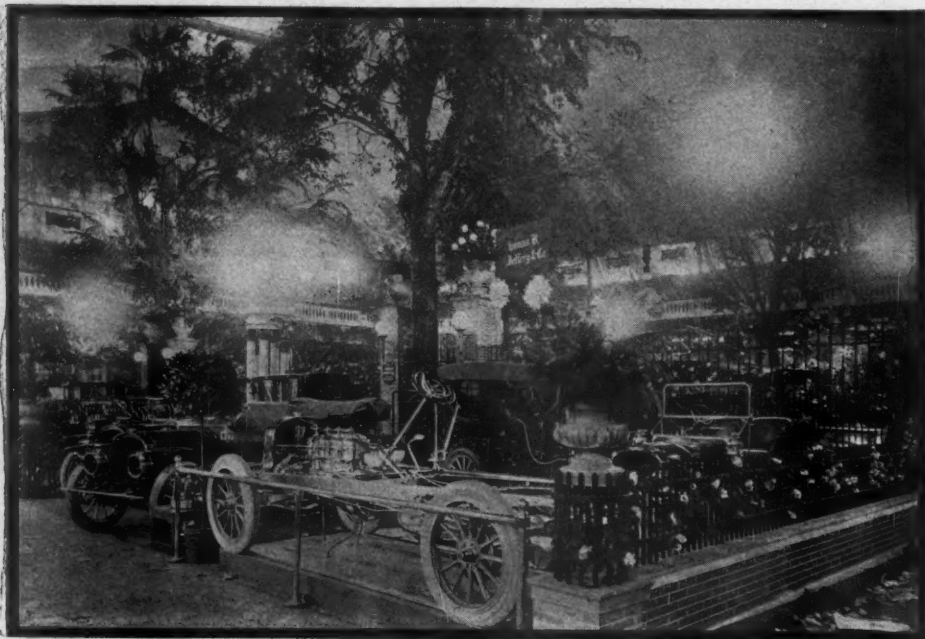
From a sporting point of view the most important feature of today's meeting was the discussing of the car classifications and cylinder sizes for 1911. This may appear a little premature, but it is not, because at the present time many makers are getting out their 1911 models and how can they design these with a view of meeting the piston displacement qualifications unless these cylinder sizes in the different classes are known? It is not definitely known yet what the 1911 and 1912 sizes will be, but an early announcement of these will make it possible for makers to go along with a definite object.

Chairman Butler of the contest board is devoting much of his time while in Chicago to the accumulation of information on the 1910 Glidden route. There are in attendance at the show scores of agents from all of the western and southern states and from these accurate information on all possible routes may be obtained. Among the makers there is a lively interest in the coming national tour and already several of them have intimated their desire to enter two or three cars in the contest.

It is expected that by the time Chairman Butler leaves for New York the final draft of the contest rules for this year will be made. Already the general parts of these rules are in printed form and with the present whipping into shape it looks as if the makers will soon be in possession of the rules that are to be used during the coming season.

### BANQUETS ARE MANY

Chicago, Feb. 9—Show week has been marked by a series of banquets given by different manufacturing concerns to their agents and representatives. Others have cut out the eating part but have held several business sessions of importance. One of the big affairs of the week was the Maxwell dinner which was given tonight at the Congress hotel, which attracted fully as large a turn-out as did the similar spread in New York. President Briscoe, of course, was called upon for a speech and in the course of his remarks he told his representatives something of the plans of the new United States Motor Co., the holding organization in which the Maxwell is so prominent. Another pleasing diversion was the annual stag party of the



TOP—RAMBLER STAND  
MIDDLE—MARMON STAND  
BOTTOM—THOMAS STAND



Woods Motor Vehicle Co., which took place in the big south side factory where so many electrics are turned out yearly. The affair did not start until after the show closed tonight and it was attended by many others besides the company's agents. Besides a hearty midnight luncheon a vaudeville entertainment was given by well-known artists.

#### DEATH OF S. A. MILES' MOTHER

Chicago, Feb. 9—Mrs. Hannah Miles, mother of Samuel A. Miles, general manager of the National Association of Automobile Manufacturers, died in Bristol, England, on Tuesday, according to a cablegram received today by Mr. Miles. Mrs. Miles had been ill about 3 weeks following a slight operation. The reaction following the local anaesthetic administered for the operation brought on a nervous and bilious stomach attack from which she was unable to rally. Four children survive her—Samuel A. and Thomas E., both in Chicago and connected with the national show, and Mrs. Arthur Pratt and William Miles, who live in Bristol. Mrs. Miles was 73 years old at the time of her unexpected death.

#### ASK FOR OUTDOOR SHOWS

Chicago, Feb. 9—Application for two summer shows were filed with the board of directors of the National Association of Automobile Manufacturers at a meeting held today in the First Regiment armory. Carl Fisher, of Indianapolis, appeared before the board, representing the interests of that city, and asked for a show date either in August or September for the speedway. A communication from motor interests in Detroit also was received by the board asking that an outdoor summer show be given in that city under the auspices of the N. A. A. M. Both requests were referred to the show committee of the association for consideration in the near future.

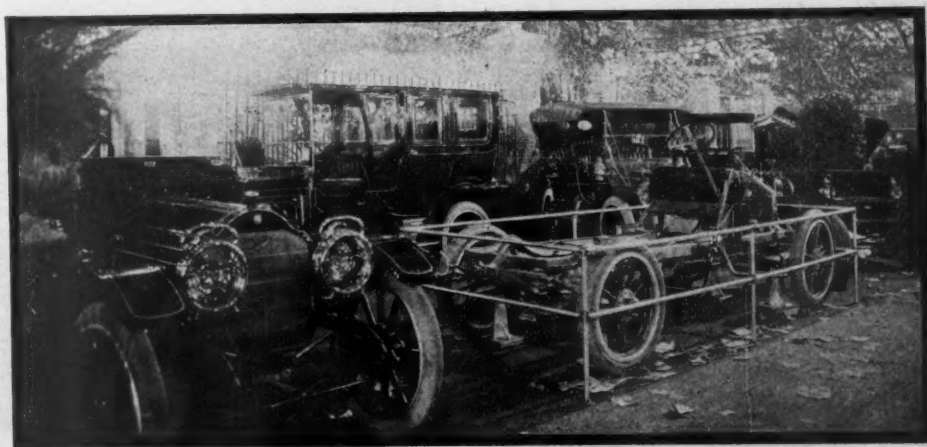
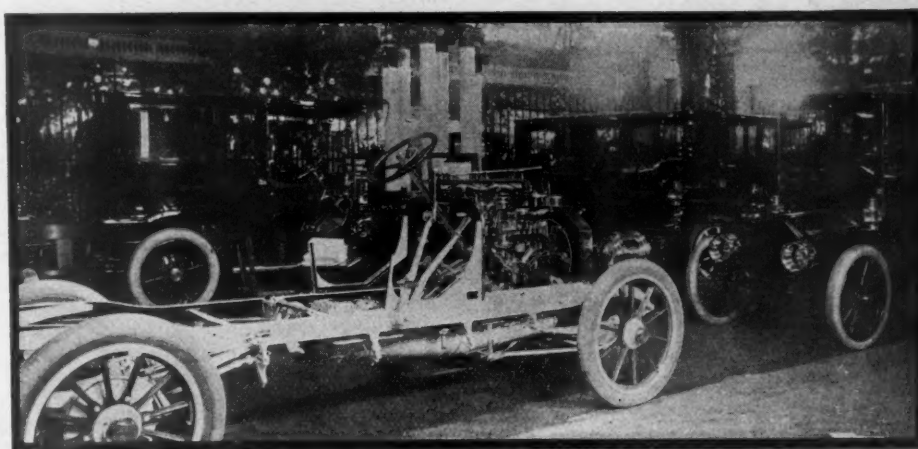
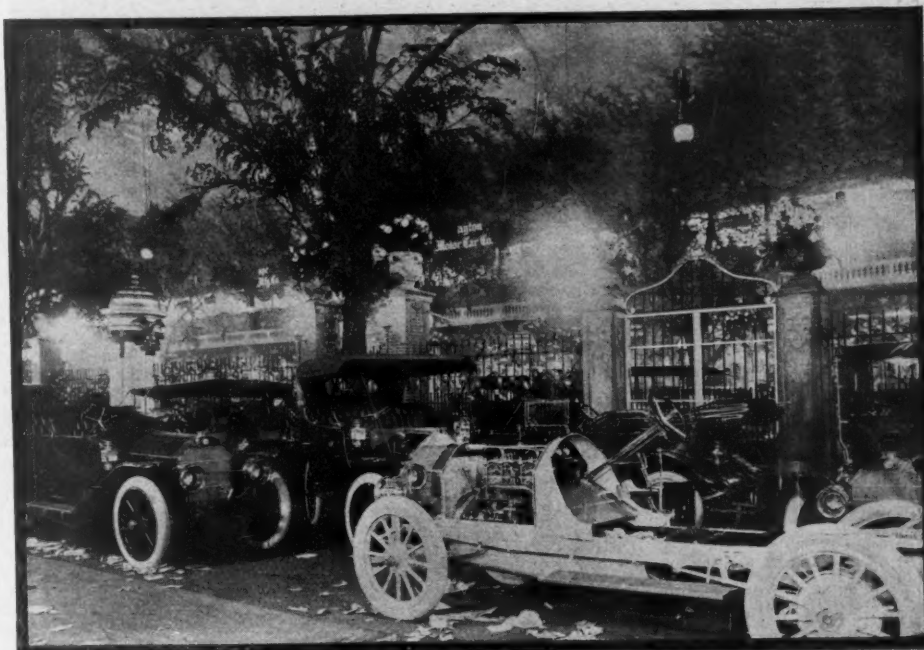
#### STIRRING UP ILLINOIS

Chicago, Feb. 8—President Charles P. Root, of the Illinois State Automobile Association has called a meeting of that body for Thursday afternoon, the first session that has been held since the last show. President Root is filled with enthusiasm over the outlook and expects that he will be able to inject new life into a state association that has been as a dead branch on a live parent tree for several seasons past. There is a fine opportunity, Root thinks, to do a lot for good roads in the state and he will outline to the meeting his general ideas along this line. Another thing that will be done will be to select a successor to Frank H. Trego, who has been obliged to resign the secretaryship because of having accepted a position with the Hudson company in Detroit, where he will report next Monday.

## Studebaker Bill Is Dismissed

DETROIT, Mich., Feb. 9—Special telegram—Judge Swan in the United States circuit court late this afternoon handed down his decision in the bill of the Studebaker Automobile Co. for an injunction against the E-M-F. The request was denied and the bill dismissed, the judge taking the ground that a bill to com-

pel a conference with a contract cannot be asked by a party that has specifically broken the same agreement. The decision in general is far more pronounced in its stand that any prior legal victory by the E-M-F and is believed to make the remaining possible litigation merely a question of damages.



TOP—STODDARD-DAYTON STAND  
MIDDLE—PEERLESS STAND  
BOTTOM—STUDEBAKER STAND

# Many Outside Shows Are Held



ROW OF PRIVATE SHOWS OPPOSITE THE COLISEUM



CHICAGO, Feb. 5—That Chicago, in common with other large metropolitan cities, needs a building of sufficient size to accommodate all those who desire to exhibit in the motor car show, never was emphasized more fully than at the present time when many concerns which desired space in the N. A. A. M. affair have been forced to hold private exhibi-

tions in stores adjacent to the Coliseum and First Regiment armory in order to get before the public. Never before were there so many left off the list by Manager Miles, but that wasn't his fault—he just didn't have enough space to go round. The buildings at his disposal have 89,000 square feet of space, and when it came to making up the diagrams Mr. Miles found that the buildings had not increased any in size within the last year. He had to draw the line somewhere and his doing so has resulted in a huge outside display which included several of the older makers, while many new faces also are to be seen.

Ford could of course have secured space had it not been his policy to exhibit his goods only in New York. Therefore, the branch store here has been turned into a show room, and in a small way is running opposition to the Coliseum. Velie also is against national shows, and is using its branch house for an exhibition of its own. But of the others, every one of them would have been glad to have taken space under the Miles tent if they could have got it. Probably more of these outsiders will open exhibitions next week, but today there were by actual count thirty-six different makes of cars participating in this outside demonstration. Of these, several of them have not been in any one of the three big shows—the Davis, Cino, Enger, West-

cott, Cutting, Continental and Henry in the pleasure car line, Schmidt and Duntley, commercial propositions, and the Ohio and Ideal electrics—this being their initial bow to the public, all of them being new creations of 1910. Of the others, the Velie, Buffalo truck, Grout, DeTamble, Abbott-Detroit, Whiting and Krit have not been in any of the national shows.

## Space at a Premium

Of the others Anhut, Panhard, Firestone-Columbus, Simplex, Standard, Palmer & Singer, Isotta, Randolph, Saurer truck, Demot, Parry and Middleby were at New York but could not get space here. In addition to these car-makers, there are several accessory concerns making private displays. The Michelin tire people of course have had to utilize the front windows of their branch for the exhibition of the Bibendum twins, those huge grotesque figures which are made to do all sorts of funny tricks by means of air motor which inflates them.

The biggest display outside of the regular show is to be found in the new building of the Simmons Hardware Co. at the

## SHOWN OUTSIDE SHOW

Abbott-Detroit  
Anhut  
Buffalo truck  
C. F. S. truck  
Cino  
Continental  
Cutting  
DeDion  
Demot  
DeTamble  
Duntley truck  
Enger  
Firestone-Columbus  
Ford  
Grout  
Henry  
Ideal electric  
Isotta

northeast corner of Michigan avenue and Fourteenth street, which has been converted into a little Coliseum by the leasing of space to a half a dozen concerns, among which are the Anhut, DeTamble, Grout, Westcott, Continental, Paterson and Henry. There is another bunch of cars at 1233 Michigan where the Davis and Enger have taken space with Cornish & Friedburg, who handle the Schacht. In the Regal store at 1502 Michigan the Duntley commercial wagon and Cino pleasure car are shown. The Firestone-Columbus is in its local agency, the Sigmund-Baylies Co., 1420 Michigan avenue, with the Firestone-Columbus pleasure car and the Columbus electric, while over on Wabash avenue is to be seen the Firestone-Columbus commercial proposition.

The Isotta is at the local agency, 1220 Michigan avenue, while other displays on the street include the Ford at 1444 Michigan, the Velie at 1615 Michigan, the Krit at 1610 Michigan, the Simplex at 1330 Michigan and the Standard at 1326 Michigan. Over on Wabash avenue and opposite the Coliseum are the Schmidt commercial at 1440, the Demot at 1458, and the Saurer truck at 1464. The Ideal electric, which is manufactured here is shown at the factory at 444 West Indiana street.

Two of the cars have secured space in



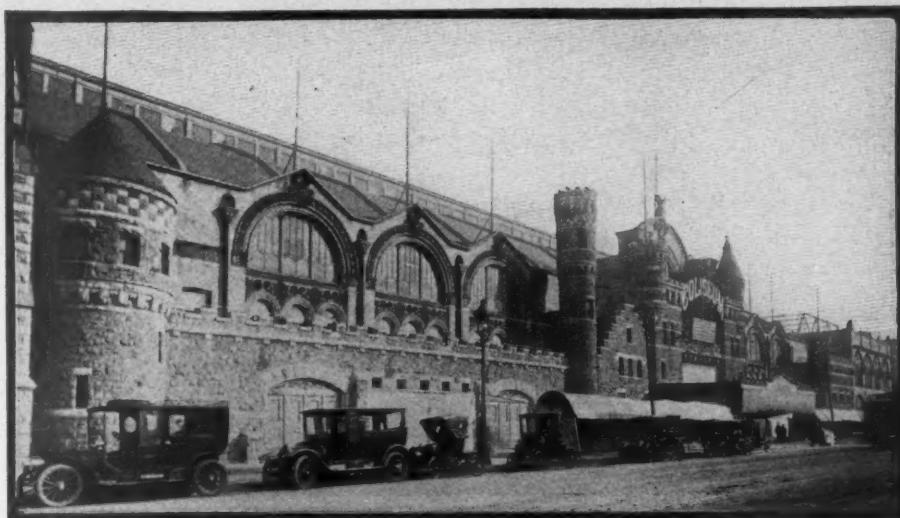
LITTLE COLISEUM, WHERE MANY MAKERS ARE SHOWING CARS



## SHOWN OUTSIDE SHOW

Kenmore  
Krit  
Middleby  
Ohio electric  
Owen  
Palmer & Singer  
Panhard  
Parry  
Paterson  
Petrel  
Randolph truck  
Saurer truck  
Simplex  
Standard six  
Velie  
Warren-Detroit  
Westcott  
Whiting

## Features Not In the Coliseum



DEMONSTRATING MACHINES LINED UP IN FRONT OF COLISEUM

the big hotels. The Palmer & Singer again is located in the reading room of the Auditorium while in the LaSalle, Chicago's newest and most magnificent hotel, the Warren-Detroit has space in the lobby.

**The Velie for 1910**

The Velie has one chassis offering with a four-cylinder engine with 4-inch square cylinders and a wheelbase of 110 inches to which is fitted a touring car, roadster or toy-tonneau body. Among the refinements noted in the motor is that the exhaust manifold is tapered to care for the added quantities of burnt gas as the number of cylinders to be scavenged increases; also the water pipe is graduated in size to accommodate the increasing volume of water from the second pair of cylinders. The fan bracket has an eccentric plate-supported fan-spindle for adjustment purposes. The valve tappet guards are held in place by cap screws and are of die-cast babbitt bushed with bronze. There is a gear-driven centrifugal pump and the valves all are on one side. The crankshaft has three large bearings and is offset 5-16-inch. The camshaft, which is made of machinery steel, is mounted on three Hess-Bright ball bearings which also are used on the pump shaft and the idler gear. To eliminate noise fiber gears are used wherever necessary. The lubrication scheme

involves the pumping of oil from an oil box under the crankcase by a gear-driven gear pump through a sight feed on the dash to the crankcase, where it is retained at the proper level by partitions, the surplus oil overflowing and returning to the oil box. The ignition consists of a four-unit coil on the dash, a timer of the La-Coste type and storage battery and spark plugs in one system, and a low-tension magneto with a single non-vibrating coil on the other. Other features of the Velie are the cone clutch inclosed in the flywheel and a sliding selective type of transmission. **Cino from Cincinnati**

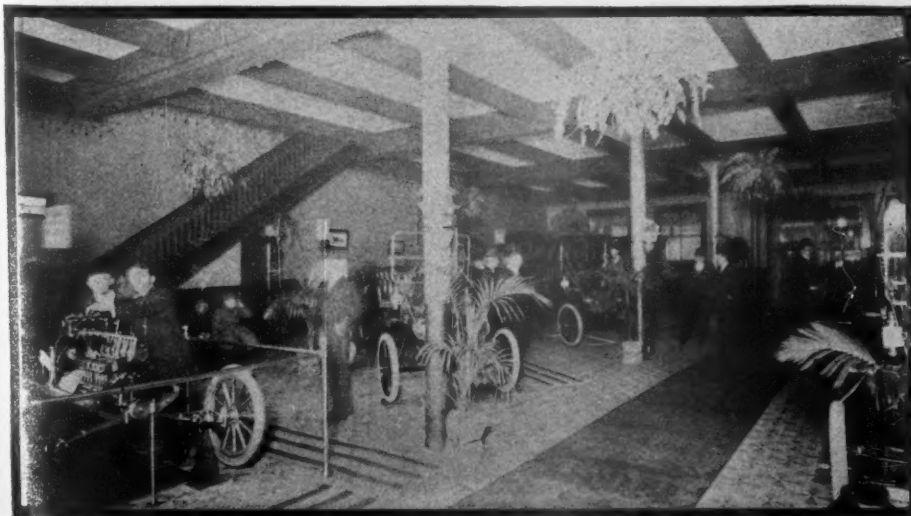
The Cino, made by Haberer & Co. of Cincinnati, carries a four-cylinder engine of the valve-in-the-head type and with the cylinders cast in pairs and with the heads and jackets integral. It has splash lubrication, the oil level being maintained by a mechanical pump, while there is a multiple-disk clutch, a selective type of transmission, and magneto ignition. The drive is through a propellershaft, two universal joints, a pinion and bevel to the rear axle, which is of the Timken pressed steel semi-

floating type. The front axle is a drop-forging of the I-beam one-piece type. The frame is of pressed steel and arched over the rear axle. Semi-elliptic springs are used in the front and three-quarter in the rear, while there are two separate brakes, internal and external, on the rear axle.

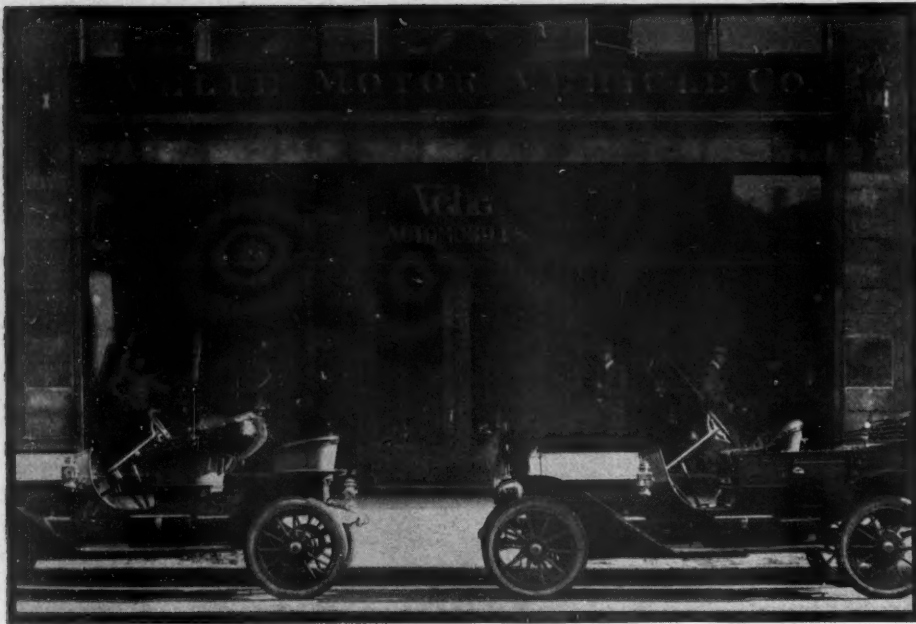
**Davis Is a New One**

The Davis, made by the George Davis Co., which is new in the field, is rated at 45 horsepower and is shown as a five-passenger touring car. The four cylinders are cast in pairs, the bore being  $4\frac{1}{4}$  inches and the stroke  $5\frac{1}{4}$  inches. The oiling system is operated by means of a gear pump, there also being a sight feed on the dash. Also featured in the motor is that the crankcase top and bottom are made of aluminum, it being possible for inspection purposes to quickly detach the lower half of the crankcase. Instead of a subframe there are arms extending from the motor to the side frame members. The transmission scheme includes the three-speed gearset and a multiple-disk clutch which are assembled in one aluminum housing. The rear axle is of the floating type, and carried on large imported ball bearings, while the frame itself is of  $4\frac{1}{4}$ -inch pressed steel. In the way of springs, there are half-elliptics in front and platform in the rear. The wheelbase is 120 inches, and the wheels carry 36 by 4-inch tires. In every respect the car is conventional.

Carried in the Westcott, made by the Westcott Motor Car Co. of Richmond, Ind., is a 40-horsepower motor with cylinders  $4\frac{1}{2}$  inches square, cast in pairs and with the valves on one side and operated by a single camshaft. The cooling is effected by means of a centrifugal pump while the oiling is splash, the oil circulating being maintained by a plunger pump which is operated by one exhaust cam. A high-tension magneto is included in the ignition scheme. The multiple-disk clutch is inclosed in the transmission case and is constructed as a unit with the transmission.



HANDSOMELY-DECORATED PRIVATE SHOW OF FORD MOTOR CO.



VELIE EXHIBIT, SHOWING 1910 MODELS IN FRONT OF STORE

Two single universal joints are used between the engine and the rear axle, while there is a double universal joint between the engine and transmission. The selective sliding gearset gives three speeds forward and a difference is noted here in that the sliding gearshaft is of the serrated type instead of square or inserted keys. The front axle is of the I-beam type and the rear axle semi-floating. The wheelbase of the car is 112 inches and the wheels 34 inches and carrying 4-inch tires.

#### Duntley a Commercial Vehicle

In the way of a commercial proposition the Chicago Pneumatic Tool Co. offers the Duntley in the light delivery car division, the motor being of the two-cylinder double opposed type, and carried under the driver's seat, which permits of more carrying capacity because of the driver being able to utilize the space in front. The motor has a 5-inch bore and a 4-inch stroke, and all valves are mechanically operated and are  $2\frac{1}{4}$  inches in diameter. The flywheel is bolted to a flange which is part of the shaft housing, while the camshafts are made of tool steel. There is a force-feed oiler of the four-plunger type, and the cooling is thermo-syphon. Double unit coil and dry cells make up the ignition. The oiler is built integral with the motor, and oil is pumped by crankcase pressure to the transmission. The gearset is of the planetary type and operated by foot levers, while final drive is through a jackshaft to side chains. In front three-quarter elliptic springs are used, and in the rear they are of the elliptic type. The wheels are 36 inches in diameter and carry 2-inch solid side wire tires. The wheelbase is 86 inches and the weight of the car ranges from 1,500 to 1,800 pounds, according to style of body and equipment. The capacity of the delivery wagon is from 1,500 to 1,800 pounds, or a 1-ton limit, while the space back of the driver's seat is 78

inches long and 38 inches wide. There are four different styles of bodies, which include the open flare board, the open flare board with a canvas top, the full panel top, and an express body.

#### Grout from the East

The Grout is offered as a five-passenger touring car and as a toy tonneau, the motor carrying four cylinders which are individually cast and which are  $4\frac{3}{4}$  by 5 inches, giving a rating of 45-horsepower. The valves are interchangeable, mechanically operated, and both sets are on the same side. The lubrication system employs a circulating pump which is located in the bottom of the crankcase, there also being a gauge in the reservoir. The clutch is a leather-faced cone and the cooling is by means of a honeycomb radiator and a gear pump, the latter being driven direct from the camshaft. The motor bearings are of hammered babbitt and bronze, while in the transmission, which is of the selective

type, Hess-Bright ball bearings are used. The axles are an I-beam in front and floating in the rear and use Timken roller bearings. There are two universal joints on the propellershaft and a straight line drive is had through strut rods. The dual system of ignition is used, and the springs are semi-elliptic in the front and semi-elliptic platform in the rear. The wheelbase is 123 inches and the wheels are 36 inches. A feature of the Grout is the steel dustpan under the power plant, which is held in place by a clamp so that it is possible to lower the pan and reach the power plant for adjustment purposes. The Grout body is a metal construction.

#### Enger Also Cincinnati-Made

Another Cincinnati-made car is the Enger 40, made by the Enger Motor Car Co. of the Ohio metropolis, the general features of which are of the conventional nature. The designer of the Enger is a believer in the long-stroke engine idea, as is exemplified by the practice which he follows, the stroke of his engine being 6 inches, whereas the bore only is  $4\frac{1}{2}$  inches. With such a combination the engine is rated at 40 horsepower. A three-bearing crankshaft is fitted, and the cooling system utilizes a gear-driven pump in addition to a fan attached to the motor. A double system of ignition is employed—a high-tension magneto with a non-vibrating coil and a five-unit dry cell battery operating through a high-tension distributor. There is splash lubrication and the clutch is a multiple-disk. The gearset is selective sliding, giving three speeds; a universal joint is placed between the transmission and the rear axle and shaft-drive is employed. The rear axle is of the floating type and made of alloy steel, with live axle shafts running on anti-friction bearings. In front the axle is I-beam. One internal and one external brake operate direct on the wheels, there being large double-acting and compensating drums. There is a drop frame made of pressed



BUFFALO COMMERCIAL WAGON HOLDS FORTH ON WABASH AVENUE



steel and 32 inches in width, while the front springs are semi-elliptic as well as the rear. The wheelbase is 116 inches and the tires 34 by 4 inches.

#### Henry a Hoosier Car

The Henry Motor Car Co. is another of the newcomers, and shows a model L Henry 35 which has a large motor, long wheelbase, a roomy tonneau and a double-drop frame. With a bore of  $4\frac{1}{8}$  inches and a stroke of  $5\frac{1}{4}$ , the motor, which is of the L-type and with the cylinders cast in pairs, has a bore of  $4\frac{1}{8}$  inches and a stroke of  $5\frac{1}{4}$ . A centrifugal pump, a square-tube radiator and a belt-driven fan bring about the cooling, while the lubrication scheme has in it a circulating inside pump, the lubricant being pressure-fed to the crankcase. There is dual ignition with a magneto playing the most important part. The multiple-disk clutch is of the steel-to-steel type and uses sixty-three plates. The gearset is located amidship and is selective, giving three speeds forward and reverse, while the shaft-drive works through a torsion tube to a floating rear axle. In the way of bearings three large plain bearings are used in the crankshaft, in the gearset they are F. & S., while ball bearings are used in the rear axle, front wheels and clutch. Plain bearings are also used in the steering knuckles and camshaft. The wheelbase is 116 inches and the tires 34 by 4 inches. The springs are semi-elliptic in front and three-quarter scroll in the rear, while the service and emergency brakes work internally on the rear wheel.

#### The Ideal Electric

Out for the first time this winter, the Ideal electric, made by the Ideal Electric Co. of Chicago, is a four-passenger brougham using a forty-cell Exide battery. The motor is a special type of Westinghouse and is placed under the seat but not higher than the frame. There is a double-reduction transmission operating by chain to the rear wheels. The wheelbase is 92



CINO AND DUNTLEY HEADQUARTERS, LATTER CAR BEING SHOWN

inches and solid tires are used on the wheels, which are 30-inch in the front and 32 in the rear. The springs are elliptic in the rear and semi-elliptic in the front. The car is lever steer, and Hess-Bright bearings are used throughout. Four speeds each way are given—4, 8, 16 and 20 miles an hour.

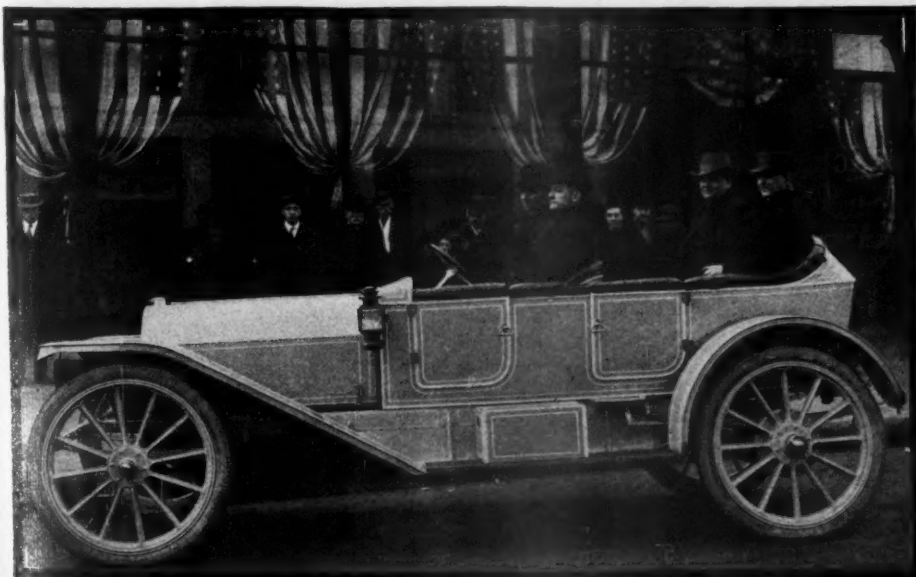
#### Ohio a New Electric

The Ohio electric is on view in the store of the McDuffie Automobile Co., at 1501 Michigan avenue. This machine, which is made by the Ohio Electric Car Co., of Toledo, is one of the few electrics to employ shaft drive. Naturally, then, the transmission is an interesting feature of the car. Direct drive is through the bevel gear to the rear wheels without the use of universal joints. The suspension scheme employed on the Ohio enables the company to make this radical departure in the elimination of the universal joints. The motor is carried over the front

axle, so that its entire weight is carried by springs, the brackets for which are bolted to the frame of the car. In general detail the Ohio shows a wheelbase of 80 inches, while the motor is one made by the General Electric Co. It is of 48-volt capacity, which permits of the use of a continuous torque controller. A drop frame is fitted, the height of the step from the ground being 14 inches and from the step to the floor of the body 10 inches. External and internal expanding hub brakes are used, there being no brakes on the motor or transmission. Exide batteries are employed, and seven speeds are furnished—4, 8, 12, 15, 17, 20 and 25 miles an hour, with a maximum efficiency at from 15 to 18 miles an hour. The rear axle is of the floating type, with Hess-Bright bearings in the hub and New Departure ball bearings elsewhere. The front axle is an I-beam drop forging with the steering rod in front of the axle. The wheels are 32 inches, and carry 4-inch pneumatics in the rear and  $3\frac{1}{2}$ -inch in the front. It has side lever inside control and the weight is given at approximately 2,500 pounds.

#### Buffalo Opposite Coliseum

The Buffalo truck, made by the Atterbury Motor Car Co., at Buffalo, is shown on Wabash avenue opposite the Coliseum. The Buffalo line takes in a light delivery wagon, trucks, and even fire apparatus. Also there is a fourteen-passenger 50-horsepower gasoline car, the chassis of which also is used for a 3-ton truck. This big machine carries a four-cylinder water-cooled motor, has magneto ignition, a sliding gearset of the progressive type, double chain drive, cone clutch and internal expanding brakes operating in a drum on each rear wheel and also a double-acting external brake on the jackshaft. The wheels are 36 inches in diameter and are fitted with solid tires, 4-inch in front and 5-inch in



KISSELKAR TORPEDO AT BRANSTETTER'S PRIVATE SHOW



WHITING CAR IN FRONT OF THE WHITING SHOW ON WABASH AVENUE



DAVIS, A NEWCOMER, MAKES ITS DEBUT IN CHICAGO

the rear. The 30-horsepower chassis has the same features, the main point of difference being in the size of the engine and tires, the latter being  $3\frac{1}{2}$  in the front and 4-inch in the rear. Also there is a 40-horsepower chassis designed for a 2-ton truck, while on the 1,000-pound delivery car there is a 20-horsepower four-cylinder motor; the tires on which car are 34 by  $2\frac{1}{2}$  inches. In addition to the gasoline line the company makes an electric truck of 5-ton capacity, a 1-ton electric and an electric ambulance. The motor used on the gasoline cars has its cylinders cast in pairs and the valves are mechanically operated. Cooling is by means of a water pump and fan, while an automatic self-contained oiling system is used. The company also makes a 5-ton truck, which is not listed in their catalog, which is equipped with a 60-horsepower four-cylinder motor and in some cases a six-cylinder 70-horsepower engine.

Showing in the same store with the Simplex, at 1330 Michigan avenue, which

also houses the Pope-Hartford and Everitt, is the new Cutting, a four-cylinder entry in the medium-priced class, and made by the Cutting Motor Co., of Jackson, Mich. It was not until Monday that the Cutting got in, having been delayed by the railroad jam. The motor in the Cutting has a bore of  $4\frac{1}{4}$  inches, the stroke being 5 inches. A magneto and battery furnish the ignition and the lubrication is affected by a splash system with a mechanical oil pump, which is gear-driven. The oil reservoir is cast integral with the crankcase. The valves are mechanically operated from one camshaft, and the inlet valves are raised direct by valve lifters, while the exhaust valves are operated by rocker arms. A gear-driven centrifugal pump, radiator and a ball-bearing fan furnish the cooling. There is a sliding selective type of transmission giving the usual three speeds forward, while the drive is by shaft, which is inclosed in a housing. The cone clutch has a composition face with springs underneath to insure smoothness of en-

gagement. The rear axle is a bevel gear of the conventional type, while the front one is a single-piece I-beam drop forging. The frame, which is made of pressed steel of channel section and with a sub-frame for the motor support, is narrowed in front to permit of easy turning. The wheelbase is 117 inches, but in order to provide for all kinds of road conditions two sizes are made, one a 56-inch and the other a 60-inch. There are two separate systems of brakes, one of them an external and operating on a pressed steel drum, and the other internal expanding. Forty-eight-inch semi-elliptic springs are fitted in front and 52-inch three-quarters scroll elliptics in the rear. The wheels are 34 inches and carry  $3\frac{1}{2}$ -inch tires.

#### Kenmore a Chicago Product

On view in the store room of the Chicago Automobile Supply House, at the northeast corner of Michigan avenue and Fourteenth street, is a low-priced air-cooler, the Kenmore, made by the Kenmore Mfg. Co., of Chicago, which is designed for both business and pleasure. It carries a two-cylinder opposed 12-14 horsepower motor, and is shaft-driven. The 32-inch wheels are fitted with either solids, pneumatics or cushions, as the purchaser desires, while options are given on a single rumble seat or a double rumble. The motor is carried under the hood and the cylinders and crankcase are cast in one piece. The motor bearings are of white metal, there are automatic intake valves and mechanically-operated exhausts, and the internal parts are reached by removing the aluminum crankcase cover. The motor is chiefly suspended at two points, one at each end, where a forging is fitted into the head of each cylinder and is bolted to the side member of the frame. These supports are dual in nature and there is a third support consisting of a heavy casting running backward from the motor to a point in the third bearing hanger on the frame member. By this construction the power plant and transmission are so closely connected that they operate practically as a unit. Another feature of this car is that it is fitted with two mufflers. The battery and coil ignition system is employed, there is a mechanical force-feed oiler, and the transmission is of the planetary type, controlled by a side lever. The wheelbase is 82 inches and there are semi-elliptic springs in the front and elliptics in the rear.

#### Continental in Little Coliseum

In the little Coliseum, Michigan avenue and Fourteenth street, is the Continental, which is manufactured by the Indiana Motor and Mfg. Co., of Franklin, Ind., and whose motor, which is cast en bloc and which is of the four-cylinder variety, has a bore of  $4\frac{3}{8}$  inches and a stroke of  $4\frac{1}{2}$  inches, the valves being on one side. The current supply is a Remy magneto and dry cells, while the lubrication is splash and pump. The car has a wheelbase of 116 inches. The clutch is a multiple-disk



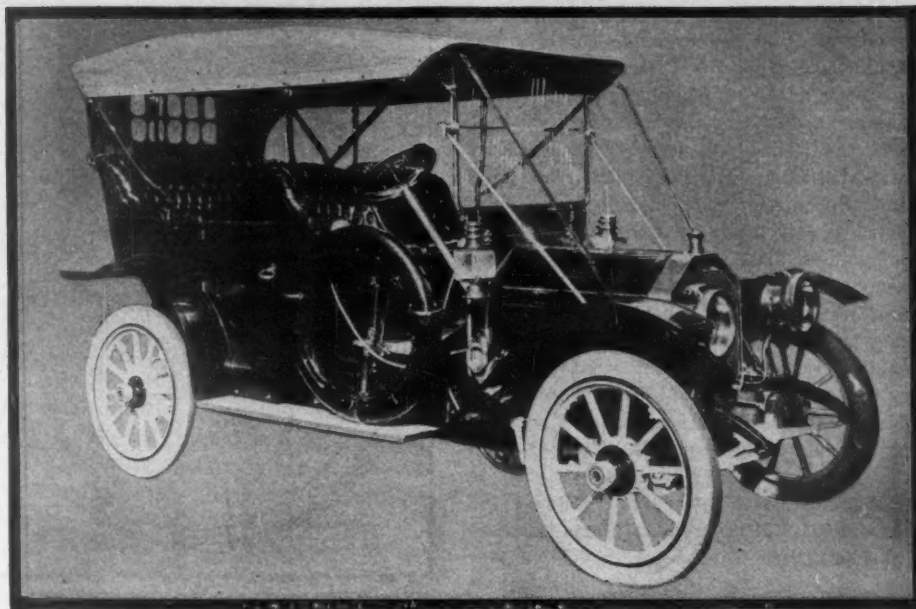
and the gearset sliding selective. Shaft drive is employed, and the tires in front are 34 by 2½ inches, the same as in the rear. The springs are semi-elliptic and elliptic scroll front and rear respectively.

#### Has a de Dion Exhibit

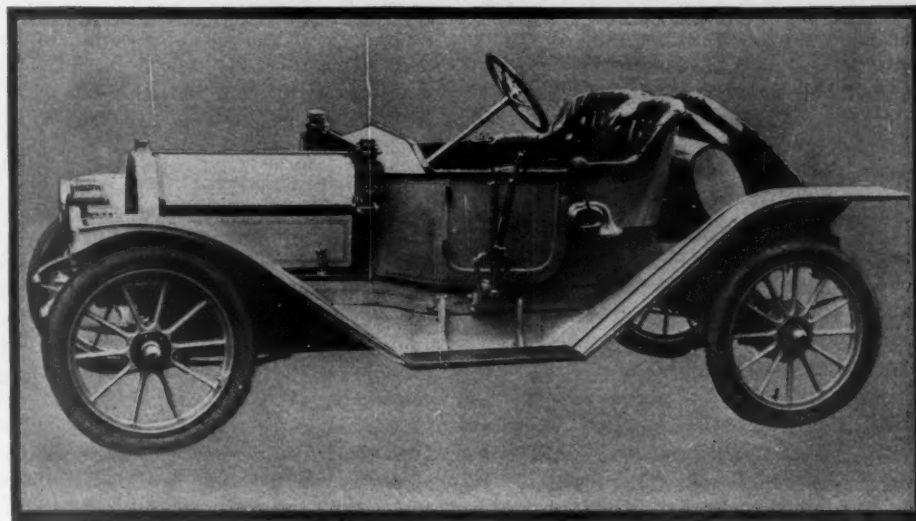
A display of foreign cars is being made at 1223 Michigan avenue, where Emanuel Lascaris is exhibiting models of the de Dion having a 14-horsepower chassis fitted with a limousine body and also a 10-horsepower four-cylinder runabout. The de Dion agency has been only recently established in its quarters at 1223 Michigan and this is one of the first opportunities Chicago has had to get a peek at the new models.

Palmer & Singer have taken advantage of the Chicago show to introduce three new models which they have brought out for 1910, the display being made in the reading room of the Auditorium hotel. One of them is the new town car which is about the same in general outlines as the present machine of this type except that the wheelbase has been lengthened. The other two are a big four and little six which have been put on to round out the Palmer & Singer line. The 50-horsepower four-cylinder car has a motor with a bore of 5½ inches, and a stroke of 5¼ inches. It is shaft-driven and has 128-inch wheelbase. The clutch is housed in the flywheel housing instead of the transmission case, as in the six-60, while the fan is now shaft-driven instead of belt-driven. Also there is an additional fan in the flywheel. In other particulars the car does not differ from the conventional Palmer & Singer design. In the little six, which has a 4-inch bore and 4¾-inch stroke, the cylinders being cast in threes, the front crankshaft bearing has been changed and a ball bearing substituted which permits of shortening the hood and adding to the beauty of the car. The wheelbase is 126 inches.

The Rockwell taxicabs are being demonstrated outside of the show by Sales Manager DeWitt Page, who has established his headquarters in the Congress hotel. The Rockwell is better known as the yellow cab, being most popular in public service in New York city. A feature of this machine is the heavy running gear which is used because of the hard use which taxicabs get. New Departure ball bearings are used throughout.



CINO, A CINCINNATI CAR, SHOWN TO THE CHICAGO PUBLIC

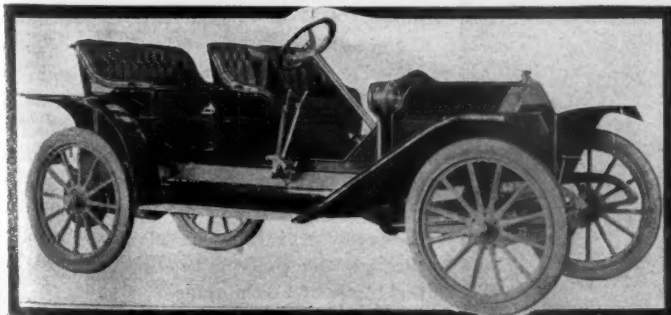


TORPEDO BODY ON FIRESTONE-COLUMBUS RUNABOUT

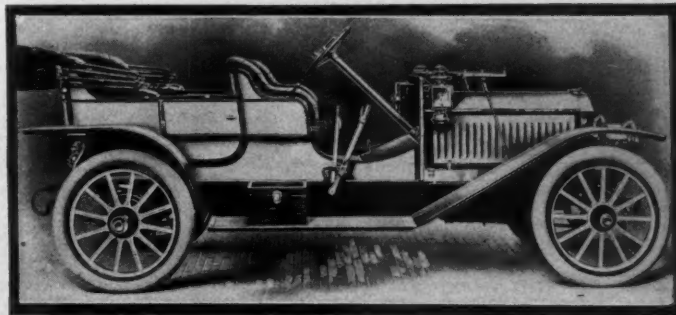
The Schmidt Brothers Co., of South Chicago, has established temporary salesrooms at 1440 Wabash avenue, where it is showing the F. C. S. commercial car which is equipped with either water or air-cooled motors. The model C carries a two-cylinder opposed 18-horsepower air-cooled engine, employs force feed splash lubrication, has a planetary gearset, and is driven by a roller chain. The wheelbase is 90 inches and the wheels are 36 inches in front and

38 inches in the rear, carrying 2½-inch solid tires. The road clearance is 15 inches. A feature of the car is that the power plant is suspended on the subframe under the center of the car, and so constructed that the entire unit can be lowered by loosening the bolts holding the subframe to the mainframe which permits of the power plant being taken off for repairs or adjustment purposes.

While the commercial Lion was shown



LION, FIRST SEEN IN THE CHICAGO SHOW



AUSTIN IN ITS MODEL 45 FORM

at New York, it was not until the Chicago exhibition that the Lion pleasure car was exhibited. Now the Lion Motor Car Co. of Adrian, Mich., is holding forth in the basement of the Coliseum annex, showing a car in the medium priced-class, a feature of which is a unit power plant, the crank and transmission cases being of cast aluminum, rigidly bolted together, forming a continuous and complete housing for all parts of the motor and transmission. This unit is suspended by means of integrally cast brackets which rest on cross members of the frame. The motor is of the four-cylinder type with a  $4\frac{1}{2}$ -inch bore and a 5-inch stroke—and the cylinders cast in pairs. The valves are drop forged with the heads integral, the intakes being in pockets in the sides of the cylinders and the exhausts in the heads. There is splash lubrication which is maintained by a gear pump which is contained in a case which is part of the crankcase. There is a dual system of ignition, and the cooling scheme consists of a honeycomb radiator, a fan and a centrifugal pump driven from the magneto shaft. Selective type of sliding gear is used, and all transmission bearings are of the Hyatt heavy duty type. The clutch is an inverted cone and leather-faced. The frame is pressed steel, and the springs in front are semi-elliptic and three-quarter scroll in the rear. The rear axle is of the semi-floating type with roller and ball-thrust bearings throughout, and one universal joint between the rear axle and transmission. The wheelbase is 112 inches and the tire 36 by  $3\frac{1}{2}$  inches.

#### Many Sundries Shown

The car manufacturers who could not get space in the national show have plenty of company because of the great number of sundries concerns which were in the same boat, and which had to interest the public in their wares by means of outside shows. Because of this Michigan avenue presents a lively appearance with its many demonstrating cars dashing up and down the boulevard and with many of the stores carrying temporary signs on their fronts announcing that inside are being shown a few ideas in accessories as well as cars.

The most pretentious display of cars

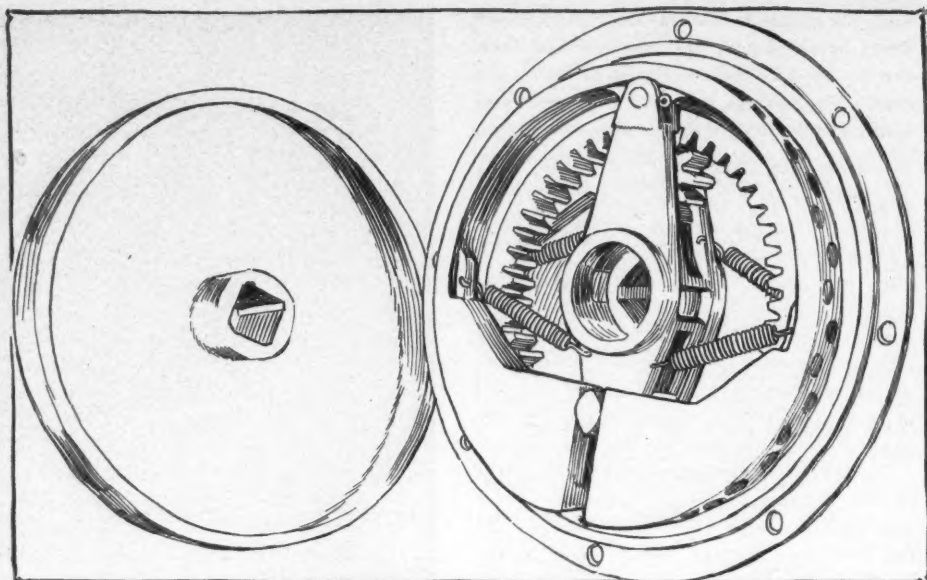


FIG. 1—GRAHAM DIFFERENTIAL GEAR

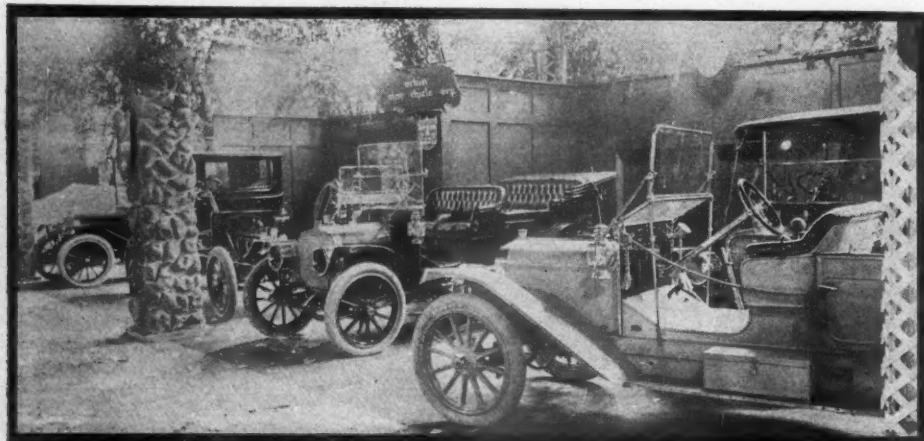
and parts is in the Simmons building, at Michigan avenue and Fourteenth street, where several accessories concerns are displaying their goods, among the articles shown being the Ball multi-spark plug, the Byam demountable rim and the Wayne gasoline system.

#### The Graham Differential Gear

Features and advantages claimed for the Graham differential gear, as compared with the ordinary differential are: A positive two-wheel drive, more freedom from skidding, longer life to tires and motor, and consequent economy in operating expense. The Graham differential is strong and simple in its construction, having no very small or delicate parts that might give trouble. It replaces the usual type of differential gear and is placed wherever such gear is located on a car—with the gear housing of the rear axle on shaft-driven cars, and on the jack-shaft of cars having double chain-drive. The operative members of this differential gear are partially shown in Fig. 1, one of the drums being removed to expose its clutch cone, carrier and cam, the other carrier and its pinion being also partially shown in the background of the illustration. The

mechanism consists of two clutches, one for each wheel, each being comprised of a clutch drum to which the squared end of the wheel-driving shaft is attached; an internal expanding clutch shoe supported by a carrier, which is free to rotate on the inwardly extended hub of the clutch drum, and which carries a pinion meshing with a single internal gear located in the center of the differential. Cork inserts are shown in the gripping surface of the clutch shoes. The bevel driving gear, the case and internal gear being bolted together, revolve at the same speed. The carrier has two oppositely extended arms, one supporting the clutch shoe, in the same manner as an internal brake shoe is held, and the other supporting the pinion, which has a squared shaft with a double acting cam at its end, by which the clutch shoe is expanded within the drum when the pinion is rotated in either direction from the neutral. The drum and its connected wheel is disconnected from the source of power at all times except when the cam expands the clutch shoe. The carriers have interlocking hubs that allow a limited motion with respect to each other. When assembled the two pinions operating the clutches of the two driving wheels mesh into the teeth of the one integral gear at diametrically opposite points, and furnish the connection through which the power is transmitted to the wheels. When the power is applied, the internal gear begins to revolve and in turn starts to rotate the two pinions. These by turning their cams expand their respective clutch shoes in the wheel drums, until the grip is so tight that further expansion is impossible, when cam motion, and therefore pinion rotation, ceases and the whole mechanism, including the rear wheel, is revolved as a unit through the pull of the internal gear on the teeth of the pinions.

The United States Ball-Bearing Co. is manufacturing a line of radial ball bear-



COZY NOOK OCCUPIED BY CORBIN IN COLISEUM



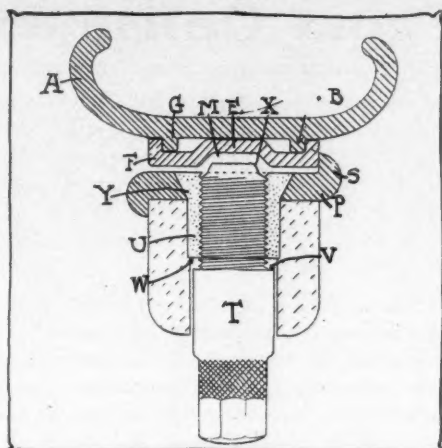


FIG. 2—BYAM DEMOUNTABLE RIM

ings of several styles and almost an unlimited number of sizes. The radial bearings consist of an inner race and outer race, which hold the balls between them, and the balls are separated from each other by disks with concaved contact surfaces. These disks are riveted to a circular ring to form a cage for the balls. The balls roll in grooved tracks of circular cross-section, having a slightly larger curvature than the balls, so that these come in contact with the races only at the bottom of the grooves. The contact, therefore, is of the two-point order, as the ball-races are each a single complete ring without joint or opening of any kind. The balls serve to lock the whole together as a complete unit. The above description covers the ten-ball type. There is a thirteen-ball style also shown by this company which differs slightly in the construction of the separators, and owing to the greater number of balls, grooves are provided through which the balls are assembled into the races under pressure. The thrust bearings made by this company are also of very simple construction, the balls being held in a cage formed by two sheet steel rings held apart by rivets with shoulders on them, and with holes drilled into them for the reception of the balls.

#### Byam Demountable Rim

The Byam demountable detachable rim, Fig. 2, consists of a divided clincher rim A held together by a lock ring E whose flanges F engage the projections G on the rim A. The lock ring E is held in place by a plate which in turn is held in place by the nut or sleeve U screwed on the valve stem. The bolts enter the groove M of the lock ring E and bind the rim and wheel together. To mount the ready-inflated tire on the wheel: The assembled tire B and rim A are set on the wheel, first inserting the valve stem in its hole in the felloe. The tire then falls into place by its own weight. Its position laterally is indexed by the flange S on the inside of the felloe band P. The bolt T then is screwed outwardly through the bronze nipple U until the shoulder V on the bolt T sets hard against the end W of the nipple U. The end X of the bolt T

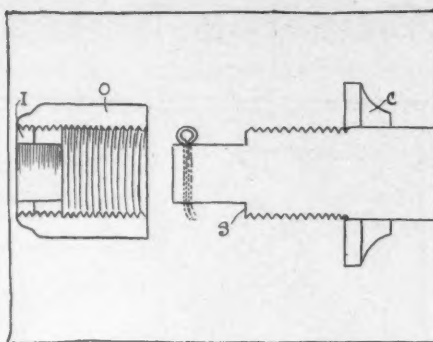


FIG. 3—EMPIRE NUT ADJUSTMENT

enters the groove of the lock ring E, binding the rim and tire firmly on the wheel. The shoulder V on the bolt T serves as an index to maintain the wheel and tire concentric. The bolt T is double-locked in position by the shoulder V being jammed against the end W of the nipple U and also by the tension of the clincher rim A. The thrust on the bronze nipple U is taken care of by the conical head Y, which rests in a countersunk opening in the felloe band P. To demount, one has but to loosen the bolts and lift the tire from the wheel. The advantages claimed for this rim are: that it is most simple of manipulation in demounting and detaching; there are no removable parts to be lost in the mud, dust or dark; there are no contact surfaces to become rusted and cemented together; and the amount of muscular effort required to perform the above-mentioned operations is comparatively small.

#### Empire Ball-Bearing Axle

The Sheldon Axle Co., Wilkes-Barre, Pa., is handling a complete line of Empire drop-forged axles in square or round, for all styles and sizes of motor vehicles, with load-carrying capacities ranging from 500 pounds to 10 tons. They are designed for the lightest motor buggies or pleasure cars as well as for the heaviest commercial trucks. The steering knuckles of the heavier types are fitted with ball-thrust bearings, and all types are designed for adjustable ball bearing wheels. The unique feature of the Empire axle lies in the adjustment of the bearings. This is done by means of the combination double

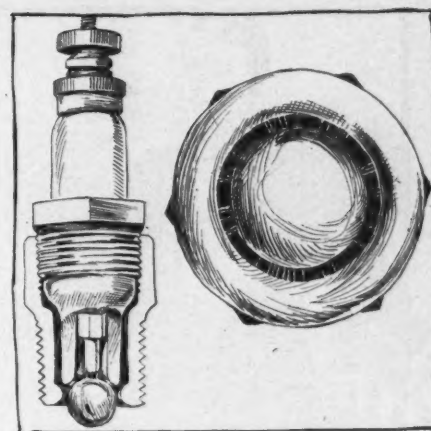
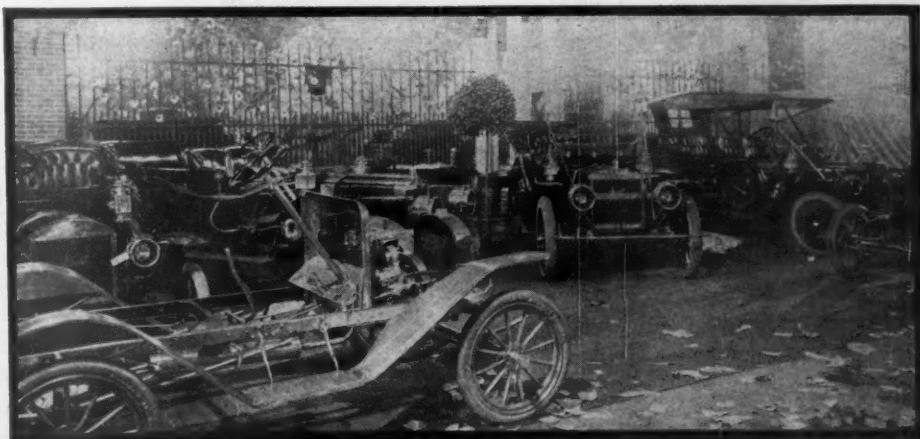


FIG. 4—BALL MULTI-SPARK PLUG

nut shown in Fig. 3. To adjust the bearing, the inside nut I is backed up to the end of the outer nut O. The outer nut then is screwed up against the outer cone C of the bearing until almost the proper adjustment is obtained, the inner nut is screwed up against a shoulder S near the end of the spindle, the outer nut is next drawn tight, and it will be found that the adjustment is quite correct. A cotter pin is fitted into the end of the spindle to insure against loosening up.

#### Ball Multi-Spark Plug

The Ball multi-spark plug derives its name from the shape of the central electrode, which is spherical, about  $\frac{3}{8}$ -inch in diameter, and the multiplicity of sparks which spring in all directions across the gap to the circular ring-like portion of the shell which surrounds it. This ring-like portion is semi-circular in cross section, thus presenting two rounded smooth or burnished surfaces to each other separated by the annular spark gap. This construction gives a condenser effect to the electrical impulses, or, in other words, causes the electricity to dam up until the potential raises to a point where it will break across the gap and thus ignite the charge of gas in the cylinder. The mechanical features of this plug are shown in Fig. 4, and attention is called to its solidity, and freedom from sharp or rough edges which facilitate the accumulation of carbon.



MAXWELL SHOWS MANY CARS IN THE COLISEUM

## Gossipy Notes From Coliseum



OPENING NIGHT

NOT the most comfortable place under the show tent is the first floor of the Coliseum annex, which again is a regular cave of the winds, occasioned by the fact that into it opens the tunnel connecting the an-



WALTER C. WHITE, WHITE



THE CATALOG COLLECTOR

nex and the armory, and because of the big door opening from the alley through which the exhibits are brought into the building. Added to this, there is a huge fan back of the Lozier booth that assists in making a small hurricane in that section of the building. So cold was it Saturday afternoon and night that one man in the Oakland exhibit, which is at the mouth of Pneumonia alley, declared he intended to put anti-freezing mixture into the radiators on the cars on the stand.

The press gallery is a particularly lonesome place in comparison to the busy spots devoted to the newspaper men in New York. It is located on the mezzanine platform above the entrance to the Coliseum, and is so dark that it is almost impossible to pierce the gloom that exists up there. It is not a particularly attractive place for the newspaper men, and during the early part of the week, at any rate, not many were found there.

The show proposition is a hard one for some newspaper men to understand, and two or three particularly rich bulls were made in the Sunday papers. One scribe in discussing the Thomas revolving chassis evidently misunderstood the purpose of the incandescent lights that are fitted to various parts of the frame, declaring, "Tiny lights are distributed through the mechanism of the engine. A press of the button lights these and the interior of the car then is ready for inspection. A rainy day or a cloudy one is all the same to the mechanic whose car has broken down far from home. A touch of the button, the break is displayed by the electric light and hours are saved that otherwise would have been consumed in the effort to locate the trouble."

Not all the exhibits of the car-makers were ready when the opening hour came Saturday afternoon. The Premier did not get in till supper time, and being in such

a prominent position this naturally caused considerable comment. The Midland was another of the sufferers of congested railroad traffic, while in the Everitt-Metzger-Flanders Co. booth there was only one car—an E-M-F—the Flanders being promised for later on.

The most prominent positions in the Coliseum are declared to be in the center of the building where the two main aisles cross. On the northeast corner is the Haynes, on the northwest the E-M-F, on the southeast the Pierce-Arrow, and on the southwest the Premier.

There is a great rivalry existing among the tire makers as to which concern will carry off the tire honors. The count at the end of the first day, it was said by one of the tire men, showed the Diamond leading in the race.

For the first time in the memory of Sam Miles the opening of the Chicago show was marked by good weather. While it was a little snappy, still the skies were clear and the wind was only a zephyr as compared with others of the past years. The ravages of the late terrific snow storm still are to be seen, however, on Wabash avenue, which is not in the best of condition at the present time from the viewpoint of the demonstrator, there being



H. O. SMITH, PREMIER



# Happenings of the Show Week

huge piles of dirty frozen snow on the west side of Wabash avenue and opposite the Coliseum, which interferes greatly with the demonstrators who in previous years always have lined up on that side of the street.

\* \* \*

The Rambler people have introduced an innovation by running daily excursions from the show to the plant at Kenosha, Wis., in order that prospective buyers and agents may have a chance to inspect the big plant of Thomas B. Jeffery & Co.

\* \* \*

Billy Knipper, Joe Matson and Lee Lorimer, three of the Chalmers race drivers, have been converted into showmen by Secretary Harry Ford. The Chalmers educational exhibit has been turned over to the three drivers, who take turns explaining to the interested spectator the mechanical construction of the Chalmers, there work being greatly simplified by their having a cut-out chassis with which to illustrate their points.

\* \* \*

It was worthy of note that the car exhibitors are not attempting to overcrowd their stands as has been done in the past. In many cases not all of the models are shown, the exhibitors believing they can have a more interesting display if the spectators have plenty of elbow room.

\* \* \*

One of the trophy displays along the row is the showing of the Wheeler & Schebler trophy, which is on view in the windows of the Ralph Temple Automobile Co., which handles the Jackson and Fuller. This has occasioned some comment among those who remember the legal war which was threat-



BENJAMIN BRISCOE, MAXWELL



EVERYONE NOT AN EXPERT

ened following the decision of Referee Stevens, who called off the 300-mile race for the trophy on the Indianapolis speedway last August at a time when the Jackson car was in the lead. This brought a vigorous protest from the Jackson company and because of that concern's advertising the A. A. A. disciplined it by barring it from competitions for a limited period. Therefore, the trophy being shown at the Jackson agency is somewhat of a balm.

\* \* \*

The Overland company gave a banquet to its dealers at the LaSalle hotel on Monday night which was attended by more than 200 agents from all parts of the country.

\* \* \*

"I never knew before that the country newspaper men took such an interest in the show," declared Walter Bermingham, press agent at the Coliseum. "It seems to me as if every rural journalist within 200 miles of Chicago has come up to the show. But I much fear that all of them are not bona-fide representatives of the country press, it having been my experience that efforts are being made to work me for complimentary tickets by means of cards which Chicago relatives of country newspaper men send in to me with the idea of getting passes."

\* \* \*

Announcement is made by George M. Davis, publicity manager of the Pierce-Arrow Motor Car Co., that the Buffalo concern has added a new model to its line—the touring coach. This big machine, which was seen at New York, was built to order, but so well did it take with the public that the Pierce-Arrow company has decided to make it stock. The coach is not on view in the Coliseum, the motorist who purchased the New York car having refused to let it come west.

\* \* \*

If New York was strict about smoking inside the show, Chicago is even more so.



CLOSING NIGHT

That stringent measures have to be used to prevent this breach of the rules was evidenced Monday when a fire broke out in the pneumonia tube connecting the Coliseum and the Armory. It seems that in some manner a 5-gallon can of gasoline was spilled in the tunnel and some careless person threw a lighted cigarette into the pool. The blaze that resulted brought



HUGH CHALMERS, CHALMERS



GOING IN

COMING OUT

out the fire department in full force, showing that the management was taking no chances. However, the engines were not used, the blaze being put out by means of a fire extinguisher. Since then, though, Manager Miles has placed a half dozen guards in the tunnel, and these guards have most effectually squelched smoking. They even go so far as to take from the fingers of the smokers the lighted cigar or cigarette.

\* \* \*

A most novel way of advertising its victory in the Vanderbilt cup race is taken by the American Locomotive Co., which has fitted to the top of its demonstrator a miniature train consisting of a locomotive and a flat car and which is called the Vanderbilt cup special. On the flat car is a small Vanderbilt cup and by means of electricity the engine of the tiny train is run. This demonstrator is the big six and with this advertisement on the top of its bonnet it attracts considerable attention along Michigan avenue.

\* \* \*

Glass bonnets on demonstrating cars are by no means new, but the Franklin people have something out of the ordinary in their demonstrator, which has a glass hood which permits of the inspection of the motor in operation. But the best results are obtained at night, when the interior of the hood is illuminated by means of tiny incandescent lights placed at different parts of the engine, the combination being particularly effective after dark.

\* \* \*

The White company did not have space in its booth for the display of its commercial proposition, but is showing the 1½-ton and 3-ton White gasoline trucks at its local agency.

\* \* \*

It would seem as if the demonstrating army is even larger than last year, for Wabash avenue presents a particularly congested appearance, while there is considerable overflow on Michigan avenue in front of the armory. One is surprised, however, to see the number of demonstrators of the electric type. Heretofore, only a few electrics have been in service during show week, but now there seems to be almost as many working as there are gasoline cars.

Not everyone knows that the cars in front of the Coliseum are demonstrators, one newspaper man declaring in his story that the show attracts "many owners who are inside the big building looking at the improved models for 1910."

\* \* \*

After the huge outpouring of people on Saturday afternoon and evening it was expected that Monday would bring out even more, but in this the management was somewhat disappointed. However, Monday night had a larger attendance than last year, although the aisles were easily navigable except that section wherein are located the Thomas and Chalmers stands. Here the revolving chassis of the Thomas and the cut-out chassis of the Chalmers draw people in droves.

\* \* \*

The torpedo body on the Firestone-Columbus has aroused favorable comment on all sides. The car is on view in the local agency. It differs from others in that it is a much smaller body than the others shown, and is used as a runabout. The



ANOTHER TOUCH OF REALISM

doors are high, coming to the top of the seats, the dash is shrouded a little deeper than usual, while on the rear platform are carried the gasoline tank and two extra casings.

\* \* \*

Despite the right of way that the pleasure car has the exhibitors of commercial vehicles are holding their own. Chicago business men seem to be much interested in the proposition. The representative of the F. C. S. has several good arguments up his sleeve, one of which shows the economy of the motor truck over a horse-drawn vehicle. He points out that the United States government report shows that 20 miles per day constitutes a day's work for a horse, and that a horse needs a rest after completing this distance. The cost of keeping a horse, including shoeing, is \$25 per month, or 80 cents a day. The motor truck will cover the 20 miles in 75 minutes at a cost for gasoline and oil of 15 cents, leaving the motor truck 10¾ hours' spare service at a cost of 12 cents an hour in which to increase trade.

\* \* \*

Chairman Butler, of the contest board, arrived in Chicago on Monday night and immediately the talk over this year's Glidden tour started, and among the makers the chief point of interest had to do with the selection of the Glidden pathfinder. Chairman Butler declared that the contest board was ready to receive proposals for this privilege, this invitation being open to all members of the Manufacturers' Contest Association and the entrants in the 1909 Glidden tour. All proposals must be filed with the contest board not later than February 19, the following conditions being named by Chairman Butler. The pathfinding car must be ready to start its trip not later than April 15, and the manufacturer to whom the privilege is awarded must agree to enter three cars for competition in the tour, to pay all the expenses of the pathfinding car, including the expenses of the representative of the contest board, and in addition the pathfinding car will also be used as the leading confetti or pilot car.

\* \* \*

The R. T. Crane Co., of Chicago, owning nineteen Chalmers 30 touring cars is, according to an announcement of the Chalmers company, the largest individual owner of a single make of motor car in the country except taxicab companies. Several cars were added to the original number during the Chicago show, bringing the total up to nineteen.

\* \* \*

The show has its barker just the same as do the side shows at the circus. In this case the barker is located at the entrance leading into the basement of the Coliseum annex, his job being to direct as many as possible into the basement in order that the exhibitors there may get their share of the patronage. This applies particularly to



the commercial cars, the barker evidently having been instructed to tout the business machines as much as possible. However, he evidently is a thrifty youth, for his cry is: "This way to the basement for the commercial exhibit and the Lion car."

While the Everitt-Metzger-Flanders Co. sign is over the space occupied by one lonely E-M-F car, it really is an exhibit made by the Studebaker company as selling agent for the E-M-F. The brass sign on the radiator of the car styles it the Studebaker-E-M-F. It seems that while the Studebaker company actually reserved the space and paid for it, Manager Miles insisted upon the Everitt-Metzger-Flanders Co. sign going up, claiming that the booth was for the display of the E-M-F car and therefore the company name should be the Everitt-Metzger-Flanders Co. and not the Studebaker company.

Hoarded in banks, hotels and club strong boxes, it is estimated that over \$10,000,000 was brought into Chicago during the week of the motor car show at the Coliseum and First Regiment armory, most of it being spent in the purchase of motor cars, according to Charles T. Jeffery, general manager of the Rambler. Mr. Jeffery figured out that out of the 100,000 visitors to the show at least 5,000 would be cash buyers. Upon investigation at banks, hotels and clubs it was found by the Rambler manager that a great deal of money was brought from the country, most of the people from the rural districts being provided with from \$2,000 upwards in cash ready for the purchase. He estimated that \$6,000,000 of this amount is in the city banks, and the other \$4,000,000 is divided evenly between the hotels and clubs.

More motor cars have been sold to the general public at the 1910 Chicago show than ever before, according to the testimony of the exhibitors at the Coliseum and armory. The reason for this is that agents' contracts have been closed for several months and the exhibiting force at the show is not bothered in arranging details for the disposition of the output of the factory, giving all its time to interesting spectators. The result is said to have surprised many of the old-timers and clearly shows the value of the Chicago exhibition.

The first entry for the flag-to-flag endurance run between Denver and the City of Mexico for the Wahlgreen trophy was made on Wednesday at the show by the Premier Motor Mfg. Co. The entry blank was filled out and delivered to G. A. Wahlgreen, of Denver, under whose direction the contest will be held, by President H. O. Smith of the Premier company. The date set for the start of the run is May 2, and the first car to be sent away will be the Premier, with Ray McNamara at the wheel. It is expected that the run will last about



THE MOTOR BRAIN

3 weeks, the route crossing part of Colorado, all of New Mexico, part of Texas, and then through nine states in the republic of Mexico. The distance is approximately 2,400 miles, nearly as long as the 1909 Glidden tour and longer than the proposed route for the national tour of the A. A. A. for the Glidden trophy. McNamara's car will probably be a four-cylinder Premier Clubman of 40-horsepower.

G. Pouget, president of the Nilmelior Electric Co., Paris, France, is one of the visitors at the Chicago show, coming all the way from Europe to see this exhibition. He placed the western agency for the Nilmelior magneto with Emanuel Lascaris, 1223 Michigan avenue, Chicago.

Without leaving his chair in the Haynes booth Agent Parker, of Moro, Ill., disposed of ten Haynes cars. Mr. Parker, who is a large man, weighing over 300 pounds, is well acquainted with the coun-

try trade surrounding Chicago. Sitting in a big chair he watched for friends and prospective customers, whistled to them as they passed and succeeded in disposing of ten machines during the early part of the week.

Fifteen hundred dealers are at the Chicago show, according to unofficial estimates. These dealers came from the states west of the Allegheny mountains, extending out to the Pacific coast, all through the northwest, the southwest and the extreme south. Some manufacturers had as many as sixty agents attending the show. "Dealers realize that this is a time of prosperity," and said one manufacturer, "and they flock to the big national show, bringing with them as many prospective buyers as they can line up. The result has been that we have had visits from agents and customers from all over the corn belt, from the copper country, from the stock-raising areas and from the Dakota wheat fields. Good crops have been realized everywhere and agents all over the country are asking to increase their orders."

As the days rolled by and the weather continued to remain balmy, show veterans wondered how Miles had managed to tame the weather man. A Chicago show without a blizzard or at least a cold snap is something unusual, but up to Wednesday even the pessimist could find no fault with the brand. Wednesday was one of the clearest days of the present winter, the sun was shining and it almost was possible to go about without an overcoat. As a result of this there was an extra-large crowd in attendance at the show that night, despite the fact that it was society night and the admission fee had been doubled. The only drawback to the enjoyment of the occasion was the unsightly piles of snow alongside the curb, a relic of the late snow storm.



HOW THEY LOOKED TO LITTLE WILLIE

# Front and Rear Axle Construction



**A**XLES have in the last couple of years occupied the attention of many manufacturers. The adoption of the I-type forged front axle to a large extent solved the situation so far as the front end of the car was concerned, although all of the car manufacturers are not using this type, some of the oldest makers continuing with the tubular design, whereas

in the last couple of years the pressed steel type has been receiving attention. The pressed steel type as used on Winton cars resembles the side members of a frame with the open channel portion placed in the rear. This year a new type of pressed steel front axle has come out and is used on the Ohio and other cars. It consists in putting two pressed channel steel sections together. One of these is sufficiently larger than the other, to admit of the smaller within it. Once inserted both are riveted or otherwise secured together. The external contour of this double axle is, briefly, a rectangle.

The rear axle perhaps has engrossed the attention of the manufacturers more during the last couple of seasons, which has been largely due to the more general adoption of shaft-drive. While a big percentage of the manufacturers of high-powered cars used chain-drive, it was natural that the rear-axle problem did not prove so vital as after the shaft-drive system came into vogue. Many manufacturers have had more trouble with rear axles than they had with sagging frames or under-powered gearsets.

## Stands Lots of Punishment

The rear axle in a shaft-drive car has to take a lot of punishment by way of road

vibration and it has been a constant fight with many manufacturers to get an axle that will stand up. By standing up is meant keeping in alignment. As all readers know every rear axle carries two driveshafts, which connect from the differential in the center of the axle to the road wheels. Readers also are aware that there is a bevel drive transfer of power from the propeller shaft to the differential and that bevel gears are particularly difficult factors to work with, in that they must be kept in alignment if efficiency is to be maintained. Should the axle housing be too weak it will sag in the center, which will interfere with the meshing of the bevels and throw the whole driving system out of alignment. It is with the housing part of the axle that perhaps the greatest energy of designers has been expended.

Before analyzing the different types of housing used on rear axles it will be in order to make, for the benefit of amateurs, one point clear in connection with rear axles, namely, the difference between floating, semi-floating and common non-floating rear axles. In a word, the floating rear axle is one in which the driveshafts connecting the differential with the rear wheels can be withdrawn after the hub caps are removed. In a floating axle these driveshafts have jaw clutches on their outer ends by which they lock with corresponding clutches on the wheel hubs. These are the two characteristics of the floating axle, namely, the presence of the clutch on the end of the driveshaft, and the ability to withdraw the driveshaft. It is an essential in the floating axle that the housings, or sleeves, extend entirely through the hubs of the wheels, so that the bearings on which each wheel is carried are outside of the axle housing. In this way the housing carries the complete weight of the rear end of the car, leaving the driveshafts as driving members only.

## Forgings for Rear Axle

### Housings Are Increasing

## Strength and Rigidity Two

### Big Objects In Design

In contrast with this is the common type of non-floating axle in which the driveshafts cannot be withdrawn through the hubs of the wheels and in which the axle sleeves do not extend through the wheel hubs. The wheel hubs are keyed direct to the driveshafts and the driveshafts carry the entire load.

### Semi-Floating Axles

Lastly, comes the semi-floating type of axle, which is a very broad term and has about as many different interpretations as manufacturers who make use of it. Because of this it is impossible to define exactly what a semi-floating axle is, but a few individual examples will give the conceptions of it as held by some makers. In one car the driveshafts of the axle cannot be withdrawn without taking the outer ball bearing off with it, that is, the bearing which is located at the outer end of the axle, and carries the road wheel. Before the driveshaft can be removed a couple of locking dogs holding this bearing in position must be partly withdrawn in order to free the bearing. In another semi-floating type of axle the entire car weight is carried on the housing, the only reason why the axle is classed a semi-floating type is that instead of the usual jaw clutches on the end of the driveshaft there is one clutch which, however, is bolted to another clutch which in turn bolts to the wheel hub. In this axle before the driveshaft can be withdrawn the screws holding the clutches to the wheels must be removed, which constitutes the only reason for designating it a semi-

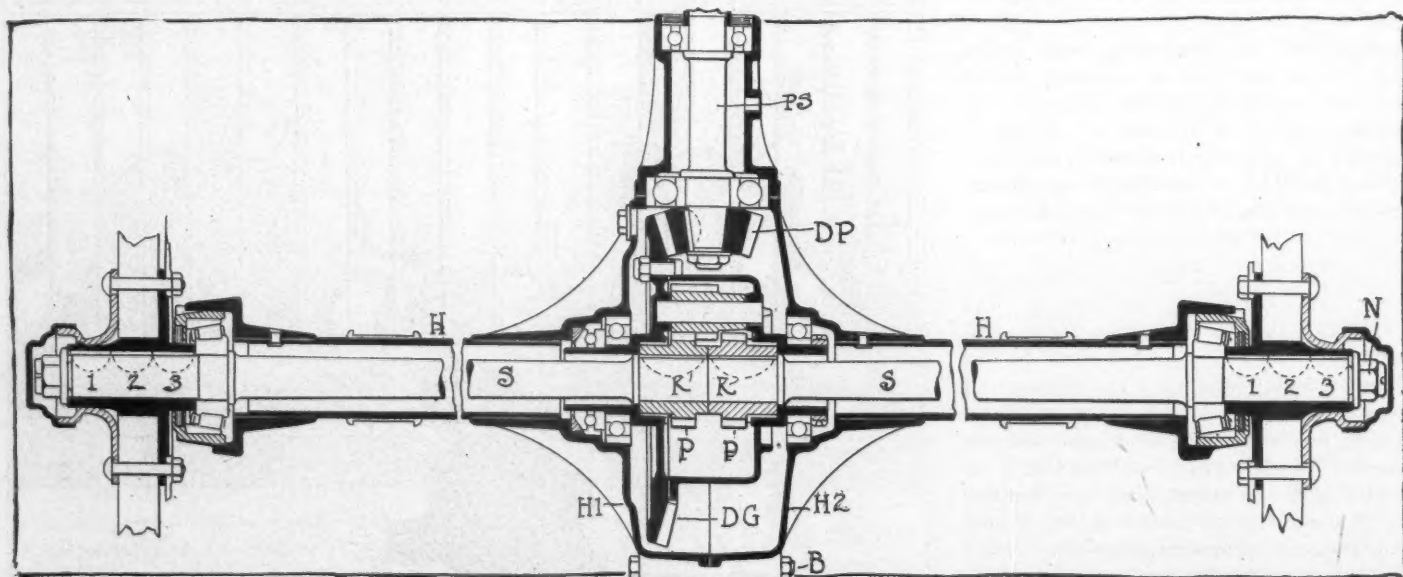


FIG. 1—PIERCE REAR AXLE AS A TYPE OF NON-FLOATING DESIGN



# Big Factors in Motor Car Problems

## The I-Beam Type Has Majority of Followers

### Floating Rear Axle Designs Big Leaders At Show

floating axle. One other make of car, designating its axle a semi-floating one, cannot withdraw the axle driveshaft without first removing the wheels, which would seem to indicate that there is little right for it to be called a semi-floating.

#### Floating and Semi-floating

In criticising the terms floating and semi-floating it would seem to indicate that the dividing line is whether the driveshafts carry any of the car weight or not. If the driveshaft on the axle has no other duty than that of rotating the wheel, then the axle is a floating type, irrespective of the ease with which the driveshafts can be withdrawn through the wheel hubs or the type of clutches on the wheel hubs. On the other hand, if all or any part of the weight of the car falls upon the driveshafts that axle ceases to be a floating type, in that the carrying of weight on these shafts is diametrically opposed to the idea of floating construction.

Attention will now be called to the driving design of some types of axles with incidental reference to the housing system, which, however, will be referred to more in detail later. Fig. 1 shows the Pierce axle, which is not of the floating or semi-floating construction, but of non-floating design and in which the driveshaft S carries the car load. Why they do this is immediately seen in that the sleeves H do not extend through the hubs of the wheels, but have enlargements in which Timken bearings carrying the shafts are located. Each wheel hub attaches to the

driveshaft by three Woodruff keys, 1, 2, 3, and additional security is afforded by the nut N, which holds the wheel hub onto the shaft and which nut is cotter pinned. The inner end of each driveshaft attaches to the differential pinion P by being keyed thereto, the semi-circular dotted lines K representing the key. The pinionshaft PS, which connects by universal joints with the propellershaft, is carried on two races of annular ball bearings, which is done to insure proper meshing between the driving pinion DP and the differential gear DG. It will be noted that this axle is particularly rigid in that keying the driveshafts S to the differential pinions as well as to the wheel hubs binds the entire driving unit together. Those familiar with working drawings, or blue prints, will note that the halves H1 and H2 of the differential housing are bell-shaped pieces held together by a circle of transverse bolts B. There is no inspection plate in connection with this housing. The driveshafts S are of Krupp steel and Hess-Bright annular ball bearings are used for carrying the differential in the pinionshaft and Timken bearings for supporting the wheels.

#### Typical Example of Floating Axle

Fig. 2 illustrates a typical example of a floating axle, namely, that used on Winton cars, and the reader should first note that in the Winton the axle sleeves H extend through the hubs of the wheels so that the two Timken bearings are outside of the sleeves and between them and the wheel hubs. This shows at a glance that the load of the car is carried on the axle housing and not on the driveshaft S. Another floating feature, which will be immediately recognized, is that the inner ends of these driveshafts are squared where they fit into the differential pinions P and that there is no keyway there, so that with the hub caps removed the driveshafts may be removed. This constitutes

the floating features of this axle. The Winton is a roller-bearing axle throughout, there being two Timken bearings carrying the pinionshaft, two races to carry each rear wheel, and two for carrying the differential. This axle is of the trussed type in that the housing H is re-enforced by a truss rod R which is intended to hold the differential housing up and prevent sagging. A turnbuckle B makes it possible to shorten this rod should it for any reason stretch and allow the axle to sag.

An example of what has been styled a semi-floating rear axle is that showing the outer end of the Marmon axle, Fig. 3, in which the driveshaft S carries a double clutch on its outer end, one of which C is integral with the driveshaft and this bolts to another one C1 which is in turn bolted to the wheel, so that to withdraw the driveshaft the series of nuts N has to be removed, after which the shaft is free for removal, the housing Z carrying the entire car load. This axle is somewhat of a novelty in that but one race of ball bearings is used to carry each wheel as well as that the brake drum is of sufficient weight to accommodate two sets of brakes, 1 and 2, which are located side by side. To stiffen the outer end of the housing of this axle a phosphor bronze sleeve Z is cast over the pressed steel housing, this sleeve forming a bearing for the spring seating as well as carrying both sets of expanding brakes.

#### Novelty on the Premier

Still another novel type of rear axle construction is that used on the Premier car as shown in Fig. 4. The driveshaft S cannot be withdrawn without first removing the wheel with the brake drum and the ball bearing which carries the wheel. It will be noted that the axle housing H carries an enlargement E at the outer end within which the ball bearing is located, so that the driveshaft is called upon to

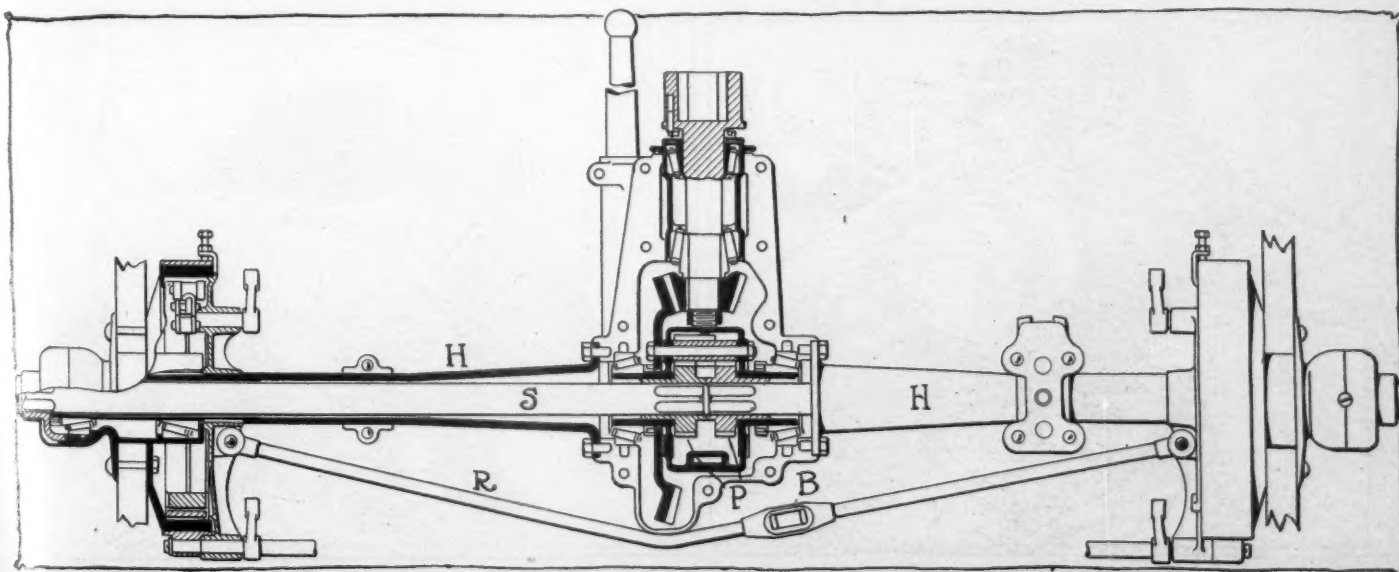


FIG. 2—THE WINTON IS AN EXAMPLE OF FLOATING AXLE CONSTRUCTION

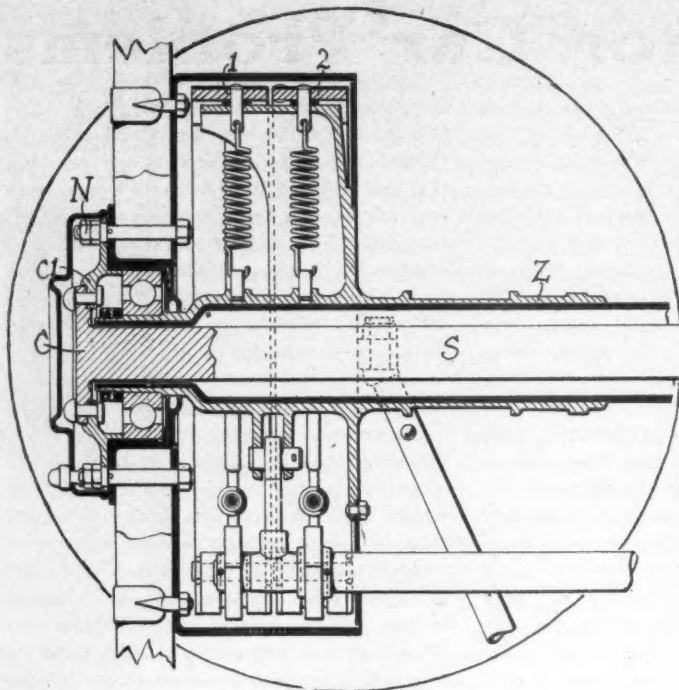


FIG. 3—THE MARMON HUB CLUTCHES

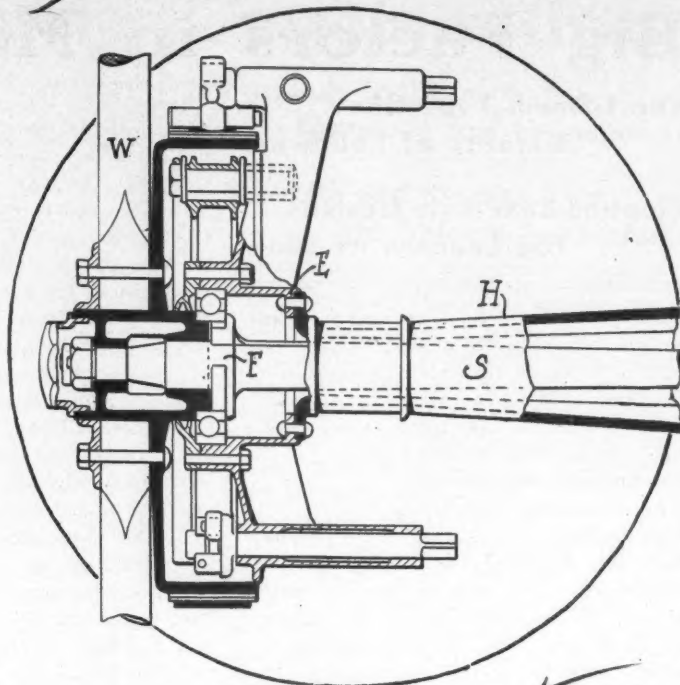


FIG. 4—PREMIER AXLE-END DESIGN

carry a part of the car weight. The wheel hub is a tapered fit onto the end of the driveshaft and is secured therein by a nut and cotter pin. The presence of a flange F on the driveshaft, and which flange bears against the inner side of the ball bearing, makes it imperative to remove the bearing when withdrawing the driveshaft. If necessary the wheel W can be removed without molesting the driveshaft or the ball bearing.

Before dismissing the problem of rear-axle drive it will suffice to draw attention to two or three prevailing constructions in connection with the support of the pinionshaft, which, as already stated, forms a continuation of the propellershaft and delivers the power to the differential. Two practices are common in connection with this pinionshaft. One of these, illustrated in Fig. 5, namely, Premier construction, is that the driving pinion DP is

located and generally formed integrally with a very short pinionshaft PS, which shaft is supported on two races of ball bearings, 1 and 2, with the pinion DP between them. Having a ball bearing at each side of the pinion insures accurate meshing of it with the differential gear DG. The support of the rear ball race 2 calls for a variety of design in many makes of cars, and in the Premier it is accomplished by a special housing Z which bolts to the main housing H. This housing is cut away, as indicated by the dotted lines Z1 just sufficiently to permit of the driving pinion DP meshing with the differential gear DG. The Peerless cars make use of a bearing back of the driving pinion and on the two-cycle American Simplex car, Fig. 6, the same construction is used, the illustration showing the bearings on either side of the driving pinion.

Having so far analyzed the driving sys-

tems in some representative types of rear axles, the reader's attention is next drawn to the matter of forming the housing in which to carry the mechanism. The housing to the rear axle is of the same importance as the crankcase to the motor, or the gearbox to the gearset. One notable change that is taking place in many of the new types of rear axle is the absence of brazing, many makers commenting that brazing of the axle sleeves in the differential housing is uncertain and instead of doing this the axle sleeves are formed with flanges on their inner ends by which they bolt to the differential housing.

The new Peerless axle is shown in Fig. 7. The characteristic of this axle is that the shaft housings are tapered forgings H, which extend throughout the wheel hubs and at their inner ends are flanged at F where they bolt to the differential housing DH, which is in this car a steel casting.

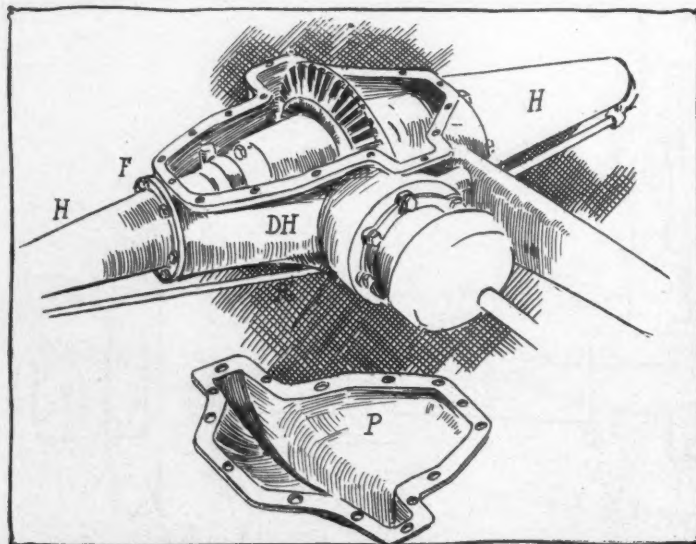


FIG. 7—NEW 1910 PEERLESS REAR AXLE

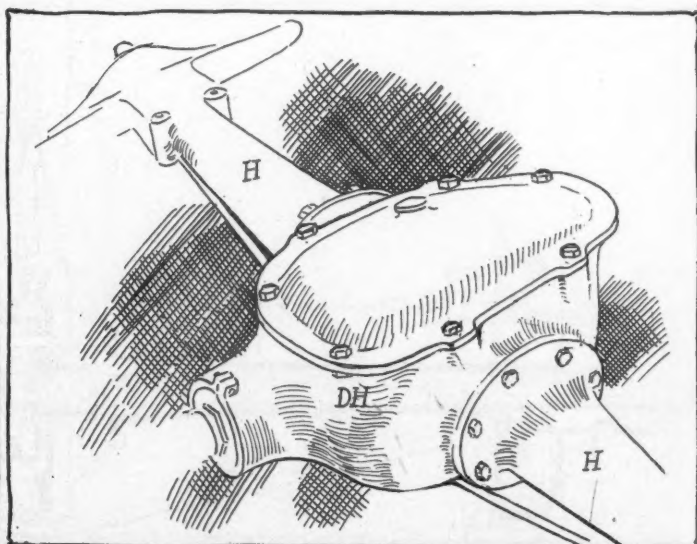


FIG. 8—REAR AXLE TYPE USED ON WHITE CARS



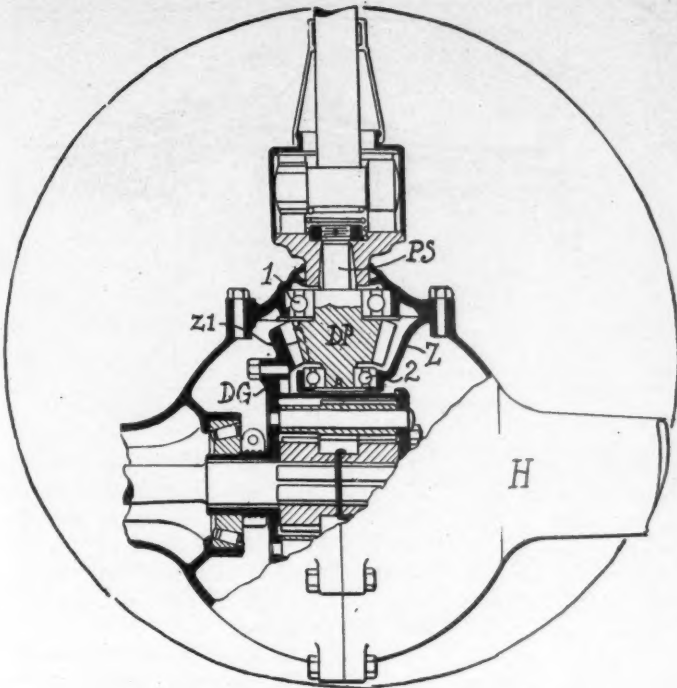


FIG. 5—PREMIER DOUBLE BEARING FOR PINION

A truss rod R is used to stiffen the entire construction. The removal of the cover plate P shows the accessibility of the transmission, which is removable without further dismounting the axle. The Peerless axle is of the arched type in that there is a universal joint in each driveshaft, this universal taking the form of an internal and external gear. Arching the axle allows of dishing the rear wheels the same as the front ones.

#### White's Rear Axle Housing

The rear axle housing on the White gasoline car, Fig. 8, has tapered sleeves H, which are steel castings. The differential housing DH is a similar casting. Brazing is obviated in this axle, in that the axle housings are flanged where they are bolted to the differential. Crucible steel driveshafts are used and there is a bearing in front and another in rear of the driving pinion. White annular ball bearings are

used throughout this axle design, which is of the semi-floating type, in that the bearing carrying the wheel is removed with the driveshaft.

Fig. 9 shows the Winton axle housing, the sleeves H of which are tapered stampings and the differential is a malleable casting, divided into upper and lower halves, 1 and 2, the division occurring in the center of the axle plane. The cover is heavily ribbed and when removed, every access is afforded to the differential. Fourteen bolts hold the cover in place. No brazing enters into this housing construction.

In Fig. 10 appears the compact type of housing used on the Pierce. This housing is a steel casting made in right and left halves, 1 and 2, bolted together. The axle sleeves H are chrome nickel tubing brazed into the differential. A truss rod is used to support the housing.

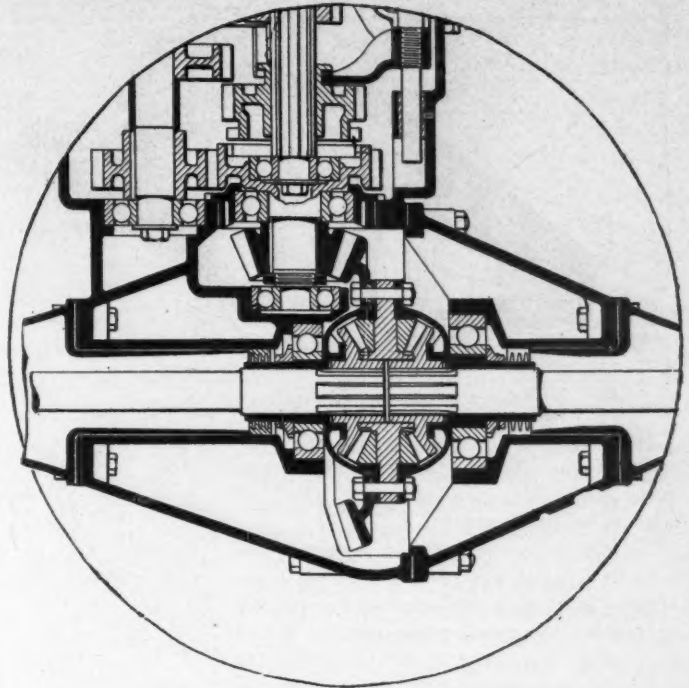


FIG. 6—TWO-CYCLE AXLE DESIGN

The type of axle which has been receiving much attention of late at the hands of three or four manufacturers is the combination type in which there is a solid one-piece construction which takes the load and on to which the driving mechanism attaches. The DeDion was the original type of this combination axle and this company still continues to use it on all but its smallest models. In America the De Luxe company gave much prominence to it, and now the Stearns are using it for the second season. It is illustrated in Fig. 11, and consists of a forging with a diamond-shaped central part D within which the differential housing is supported and sleeves H which extend to the outer ends of the axle. The portions H in this housing are bored out to take the driveshaft of the axle. Using a forging of this type is looked upon to give a rigid construction as if a solid rear axle, such as

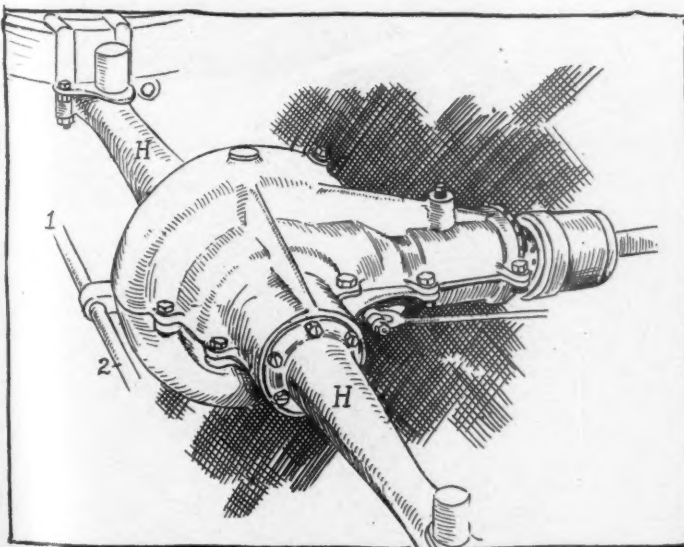


FIG. 9—THE PRESENT WINTON REAR AXLE HOUSING

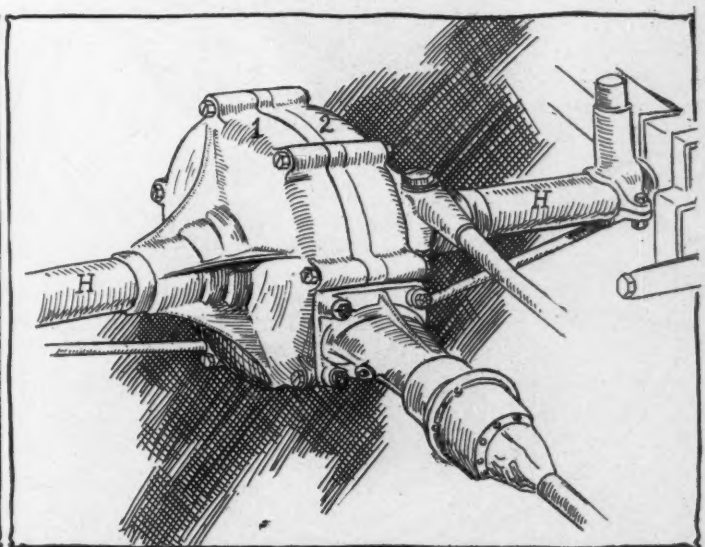


FIG. 10—PIERCE-ARROW RIGID TYPE OF REAR AXLE







FIG. 15—GLIDE GEARSET AND REAR AXLE SCHEME

enforced by phosphor bronze parts. The differential gear is mounted in a steel casting which bolts into the stamping part and the gearbox also bolts to this portion which is made the skeleton, as it were, of the construction. Once the gearbox is bolted in place it is not supposed to be removed, and should the shafts or gears demand removal this is done from the rear by first dismounting the differential and then withdrawing the parts of the gearset. This axle is trussed laterally and there is a longitudinal truss from the axle center beneath the gearbox and forward to the front end of the torsion tube.

Two examples of cars using the combined rear axle and gearbox, but in which the gearbox is a separate unit from the rear axle, are the Matheson six, Glide, Regal, and some others. In the Glide, Fig. 15, the differential is made in halves divided horizontally in the bearing frame, the lower half being a steel-casting and the upper half carrying the cover plate an aluminum casting. The gearbox is a separate compartment and bolts to the front of the differential housing. It is an aluminum casting of conventional design.

The axle sleeves are tubings which bolt to the differential and are driven through the wheel hubs, giving a floating design. There is a longitudinal truss rod which extends forward the gearbox to the end of the torsion tube. Timken roller bearings are used throughout in this axle and gearset. The Regal is another example of separate gearbox construction.

#### Matheson Idea of an Axle

In the Matheson six the gearbox and differential are in one crucible steel casting, with the axle housing steel tubing brazed into flanged ends which flanges in turn bolt to the differential case. F. & S. bearings are used throughout, the drive shafts are vanadium steel, and a  $\frac{3}{8}$ -inch truss rod extends beneath the axle. An accessible feature of the Matheson construction is that the entire top of the gearbox and differential is a one-piece cover plate which, when removed, the differential of the gearset or both may be taken out.

In the Pennsylvania car the differential and gearbox are formed in one casting, consisting of a spherical portion housing the differential and a tubular for-

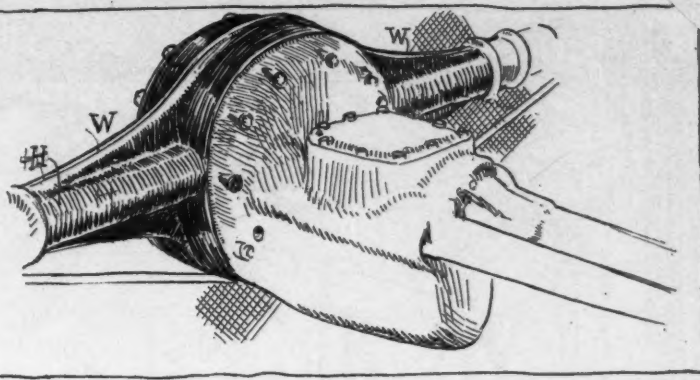


FIG. 16—THE PRESENT MARMON GEARSET DESIGN

ward extension for the gearset. Nickel steel is used in all parts of this axle, and the differential may be removed through a cover plate on the rear face of the housing. The axle sleeves are riveted and brazed into the central housing.

No better example of stampings for axle construction work is seen at the show than in the Fiat, in which the complete axle housing and torsion tube is formed from two stampings, Fig. 19, these stampings being securely bolted together. As in practically all foreign cars no inspection openings are furnished for the differential, the scheme of construction being to make the whole system as rigid as possible. Using stampings permits of light construction, although it may appear heavy because of the size of the parts.

The new Smith axle, manufactured by the A. O. Smith Co., and used on several cars this year, has the differential housing formed of a two-part stamping, the whole having a ball effect. The torsion tube is also a stamping and is supported at its forward end in a ball-and-socket hanger. This axle is of floating construction and the truss rod is not used.

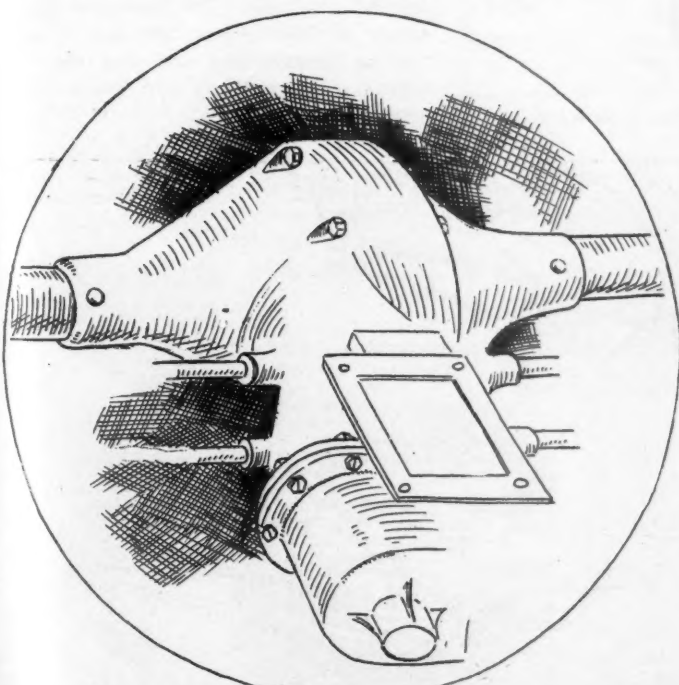


FIG. 17—REAR AXLE ON NEW EVERITT CAR

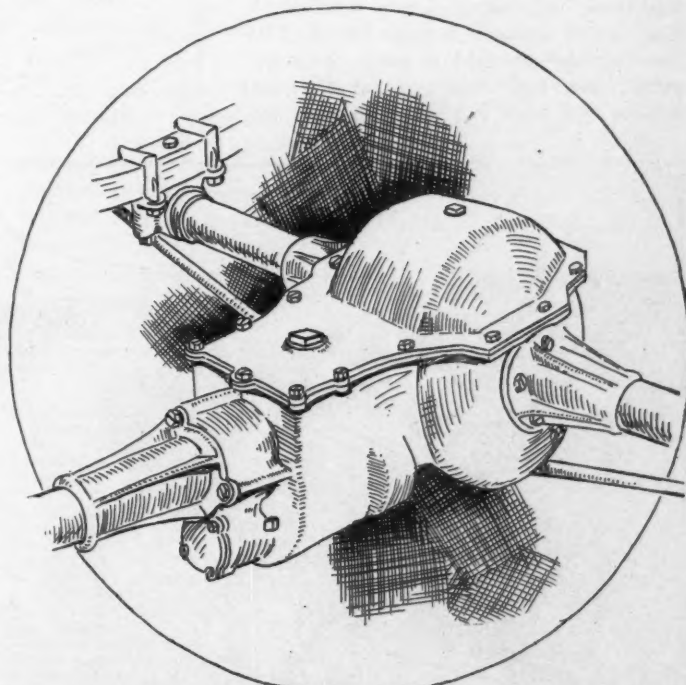


FIG. 18—THE DESIGN ON 1910 MATHESON SIX

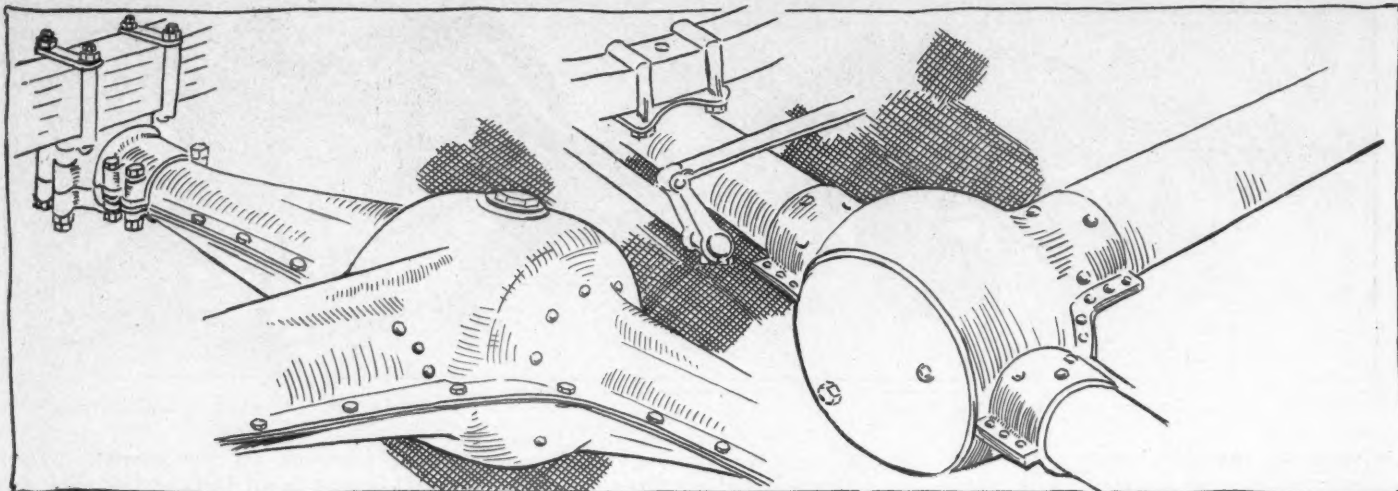


FIG. 19—LATEST PRESSED STEEL FIAT DESIGN

In a general study of the rear axle field many little peculiarities of design appear, but the tendency everywhere is towards strength. The Locomobile axle, Fig. 23, has a rigid construction, the differential consisting of halves H1 and H2, each being a bell-shaped steel casting. The axle sleeves are nickel steel tubing, heat treated, and driven into the tubular ends T of the differential, the amount of power required to press the sleeves in being limited only by the tensile strength of the portion T. No brazing enters into this axle construction. The driveshafts in it are of nickel steel, ball bearings are used throughout, and the supporting truss rod is adopted.

#### Premier Type of Axle

The Premier has used a compact type of axle for several seasons, and its contour is shown in Fig. 21. The casting consists of two bell-shaped annealed steel castings H1 and H2, the bell-shaped ends bolted together and containing the differential. Where the sleeve portions expand into these bell endings, heavy internal ribbing to add strength is made use of. Timken bearings are used to carry the differential, and ball bearings for the rear wheels. No truss rod is required in this

axle construction. The driveshafts are nickel steel. This axle has been marketed in its present form for several seasons.

A feature of the Maxwell rear axle is that a dummy bevel B, Fig. 24, is positioned back of the differential gear, so that there is no possibility of it getting out of mesh with the driving pinion. The use of this dummy eliminates the necessity of thrust bearings. The Maxwell axle

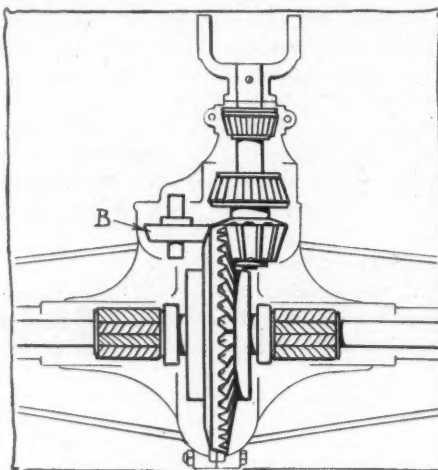


FIG. 24—MAXWELL REAR AXLE

has a double truss system and Hyatt roller bearings are used for carrying the axle shafts.

In the new Moon car the gearbox bolts to the forward side of the differential housing, the latter being of malleable casting. The axle sleeves are pressed into flanges at their inner ends with 20 tons pressure and these flanges bolt to the differential. This construction is heavily ribbed and no brazing is used. This axle is not of floating construction, but rather it has added rigidity in that the axle driveshafts have the differential pinion pinned in place and the road wheels keyed to the ends of the shaft. The gearbox is a malleable casting and the axle is double trussed.

#### Bell-Shaped Construction

There is a large class of cars which use a conventional rear axle construction, the differential housing of which is made up of two steel castings of bell-shaped construction, with the axle tube brazed and riveted into these. The Jackson is one example of this design. The axle is not a floating construction and has the road wheels a taper fit on and keyed to the driveshafts.

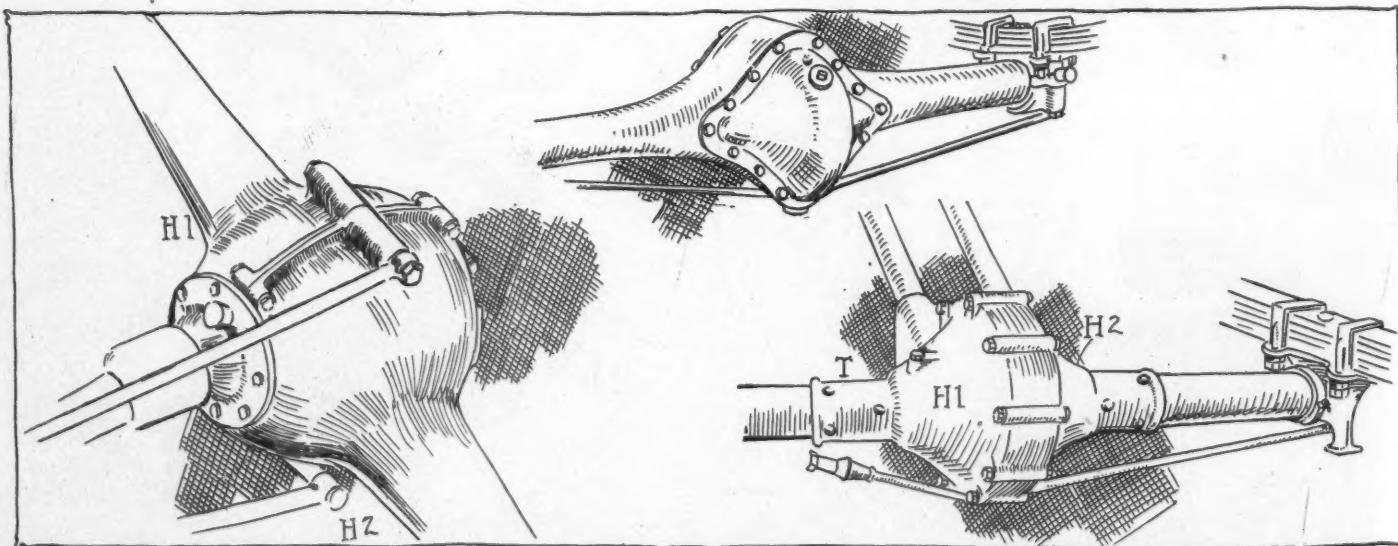


FIG. 21—PREMIER AXLE

FIG. 22—TIMKEN 1910 AXLE

FIG. 23—LOCOMOBILE AXLE



# Statistics of the Chicago Show

## Gasoline

	1910.	1909.
Complete cars...	266	249
Complete chassis	71	53
.....		
Taxicabs	1	1

## Commercial

	1910.	1909.
Complete cars...	6	12
Complete chassis	6	3
.....		
Taxicabs	1	1

## Electrics

	1910.	1909.
Complete cars...	33	34
Complete chassis	2	3
.....		

## Bodies

	1910.	1909.
Seven-passenger touring....	40	37
Five-passenger touring....	73	60
Two-passenger runabout....	35	29
Three-passenger runabout...	9	18
Four-passenger runabout....	10	31
Toy tonneau.....	64	41
Limousine.....	17	18
Landaulet .....	8	6
Town car .....	3	1
Miscellaneous.....	7	8

## Motors

	1910.	1909.
Water-cooled .....	336	295
Air-cooled .....	14	23
Four-cycle .....	335	308
Two-cycle .....	15	10
Eight-cylinder .....	0	0
Six-cylinder .....	51	38
Four-cylinder .....	276	218
Three-cylinder .....	0	4
Two-cylinder .....	17	53
One-cylinder .....	6	5
Cylinders cast in pairs.....	215	166
Cylinders cast separately....	107	136
Cylinders cast en bloc.....	26	11
Cylinders cast in threes....	2	5

## Steam

Steam cars.....	3	3
Steam chassis.....	1	1

## Ignition

Jump spark.....	330	291
Make-and-break .....	20	27
Jump spark systems—		
Double .....	103	96
Dual .....	178	91
Single .....	49	131
Magnetos, high-tension....	169	116
Magnetos, low-tension....	139	31
Storage battery.....	120	123
Dry cells.....	197	52

## Gearsets

Selective sliding.....	280	220
Progressive sliding.....	28	34
Planetary .....	31	45
Friction .....	11	19
On rear axle.....	54	39
Unit with crankcase.....	54	39
Separate .....	242	240

## Final Drive

Shaft .....	312	241
Side chain.....	29	58
Single chain.....	9	19

## Clutches

Cone .....	140	118
Multiple disk.....	138	106
Expanding .....	21	18
Contracting .....	9	15

## Palace Show 1910

### Pleasure Cars

#### Gasoline

One-cylinder ...	4
Two-cylinder ...	8
Three-cylinder ..	1
Four-cylinder ..	159

#### Body Types

Touring .....	69
Runabout .....	33
Toy tonneau....	19
Roadster .....	17
Limousine .....	15
Coupe .....	10
Landaulet .....	9
Torpedo .....	7
Town car .....	5
Racers .....	3
Close-coupled ...	2
Chassis .....	49
Air-cooled .....	7
Water-cooled ...	231
Commercial .....	50
Electric .....	2
Total vehicles...	290
Car exhibitors...	183
Accessories .....	286

## Garden Show 1910

### Pleasure Cars

Two-cylinder ...	1
Four-cylinder ...	106
Six-cylinder ...	31

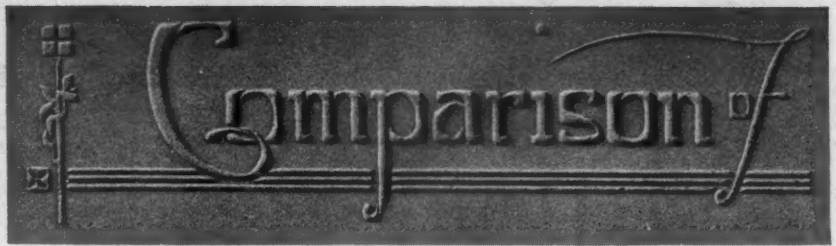
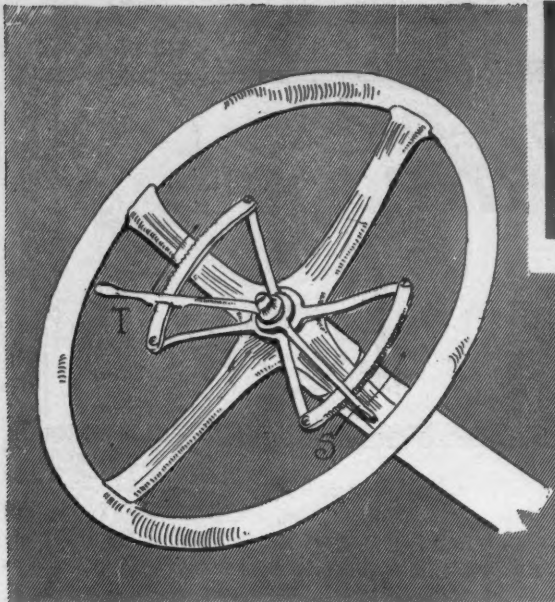
#### Body Types

Touring .....	51
Limousine .....	22
Runabout .....	17
Toy tonneau....	16
Roadster .....	15
Victoria .....	10
Coupe .....	8
Brougham .....	7
Town car .....	5
Close-coupled ...	2
Demi-tonneau ...	1
Racer .....	1
Chassis .....	32
Air-cooled .....	4
Water-cooled ...	166
Shaft-drive .....	159
Chain-drive .....	12
Commercial .....	30
Total vehicles...	234
Car exhibitors...	43
Accessories .....	267

## Other Coliseum Shows

	Spring 1906	Fall 1907	1907
Total number of vehicles exhibited, including pleasure rigs, chassis, electrics and commercial wagons...	366	359	410
Gasoline cars .....	222	249	262
Gasoline chassis .....	67	67	55
Foreign pleasure cars....	11	10	...
Domestic pleasure cars...	211	230	297
Gasoline commercial cars..	20	9	33
Foreign chassis .....	9	3	1
Domestic chassis .....	59	64	5
Double chain drive.....	90	63	86
Single chain drive.....	46	23	13
Shaft drive .....	171	219	224
Friction drive with double side chains .....	9	12	13
Rope drive .....	2	2	5
Runabouts .....	37	66	84
Touring cars .....	141	129	118
Limousines .....	34	42	38
Landaulets .....	4	6	5

	Spring 1906	Fall 1907	1907
Miscellaneous, including toy tonneau and motor bug-gies .....	6	1	13
Air-cooled .....	42	44	44
Water-cooled .....	267	275	306
One-cylinder, vertical .....	1	2	...
Two-cylinder, vertical....	14	1	7
Three-cylinder, vertical...	3	2	3
Four-cylinder, vertical...	208	241	227
Six-cylinder, vertical .....	6	14	39
One-cylinder, horizontal...	12	10	3
Two-cylinder, horizontal...	55	41	71
Four-cylinder, horizontal...	1	0	0
Miscellaneous .....	9	8	2
Electric pleasure cars....	34	36	35
Electric commercial cars..	8	1	20
Electric chain cars.....	22	21	41
Electric gear drive.....	17	15	9
Electric shaft drive.....	3	3	3
Steam cars .....	7	4	5
Steam chassis .....	1	0	0



*A standard form of change-gear control is highly desirable, in that it will avoid accidents and simplify the work of driving a car. A standard type of H quadrant could be adopted by the manufacturers and some uniformity in progressive sets afforded. Emergency brake levers should pull towards the driver when brakes are applied.*



**STANDARDIZATION** is the cry of the day. Every car owner who buys a car fitted with one magneto, wants the bed plate to be such that any other make can be fitted if a change is desired. A year ago the Timken company brought out short-series roller bearings so that they might be used in any place where annular

ball types may be fitted. All manufacturers of annular ball bearings make these in interchangeable sizes, so that if you want to change from F. & S. to H-B, or vice versa, it can be done without inconvenience. The ramifications of standardization are multitudinous, although up to the present time the desired amount of progress has not been made. It is true some years ago the mechanical branch of the A. L. A. M. decided on a standard size of yoke ends, and different thread sizes, but beyond this little in the way of standardization has occurred, although the promiscuous improvements which exhibit themselves from season to season show unmistakably that the different makers are unconsciously standardizing in the size of parts, in the design and in the arrangement, so that it is safe to assume that without any conscious movement towards standardization this would prove the inevitable outcome.

#### Meaning of Standardization

Up to the present standardization has had to do chiefly with the size of parts and the design, but there is no reason why the arrangement of different parts should not receive a measure of attention. There is no part of the car in which standardization would be more gladly welcomed by the car owner, the garage man, the taxicab company, etc., than that of control.

At present the controlling pedals, levers, and steering-wheel levers are very diversified, whereas they should be as standardized as it is possible to make them. There are chauffeurs, today, who are called upon to drive from four to six different makes of cars daily, and, in order to do this, they must be master of as many different systems of car control. On one of them the emergency lever is pushed forward, on another it is pulled back; one advances both spark and throttle control on the steering wheel to give an earlier spark and more throttle, whereas the other pulls these back to accomplish the same result. On one car both throttle and spark controls are on the right half of the wheel, on a second car they are on the left, on a third they are beneath the wheel at the left, on a fourth one is at the right side and the other at the left, both beneath, and on a fifth both are above—one to the right and the other to the left. This diversity of spark and throttle controls could be continued indefinitely.

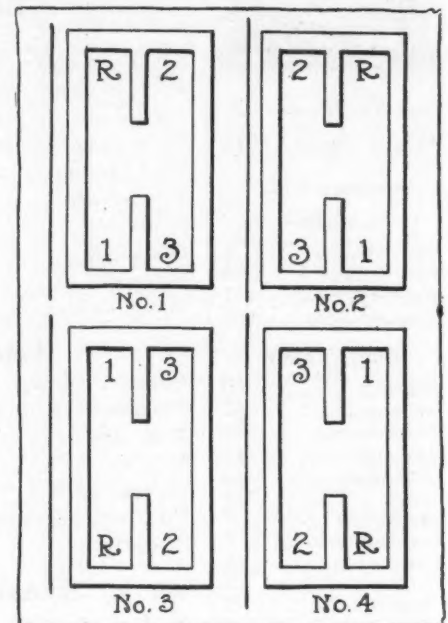


FIG. 1—GEAR-SHIFT QUADRANTS

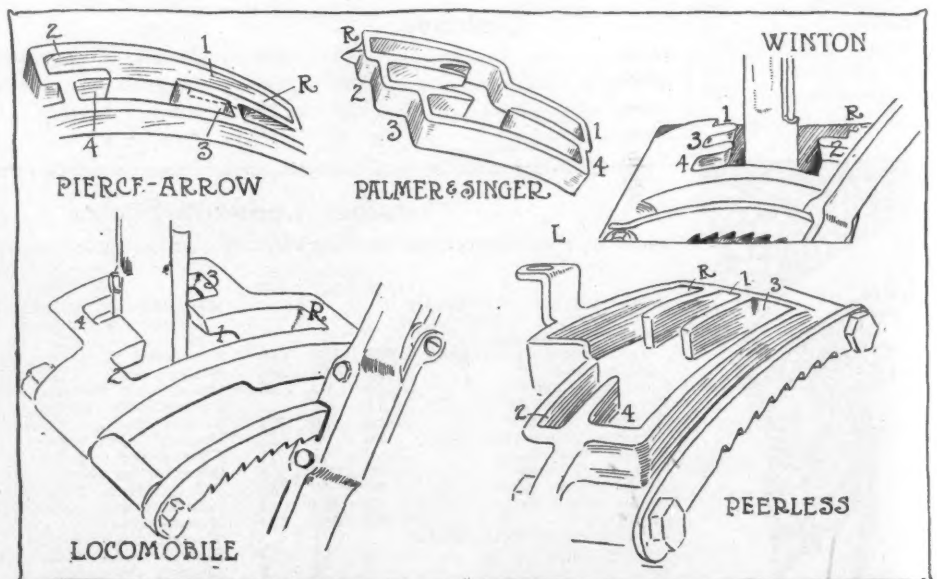


FIG. 2—EXAMPLES OF FOUR-SPEED QUADRANTS



# Motor Controls

Uniformity of throttle and spark control on steering wheels would be a welcome step in the matter of standardization. The spark and throttle controls should be located in definite positions and have a definite amount of movement for same speed increases. A uniformity in pedal and accelerator pedals is also needed.

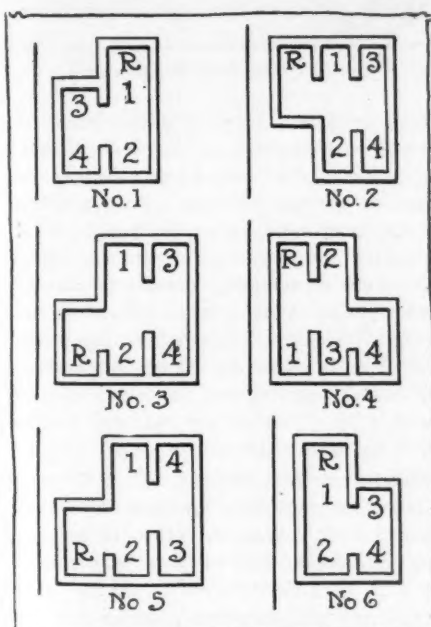
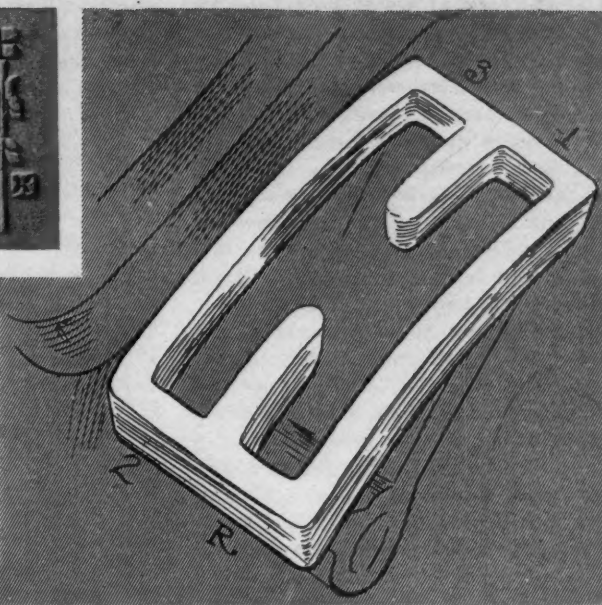


FIG. 3—FOUR-SPEED QUADRANTS

But the diversity and lack of standardization in the position of the spark and throttle controls on the steering wheels are no worse than that of the positions of the change-speed lever to give the different forward speeds and the reverse. On one car with an H quadrant, in which the change-speed lever works, the lever is pushed in and forward for low speed, on another it is pushed out and back, and as many different positions as there are for the first speed there is an equal number for all the others.

## Change-Speed Levers

An analysis of the different arrangements of positions of the change-speed lever for a gearset having three forward variations is as follows: The most popular is the reverse inside and forward, first or low speed inside and back, second speed outside and forward, high outside and back. This No. 1 system is a very simple arrangement in that second and high are in the same slot, making it an easy mat-

ter to drop from high to second in climbing a hill, or if desired the car can be started on second, which makes an easy shift to high. In a selective control it is best to have those speeds in one slot, which are most frequently used and which must be changed in ascending hills or other places where good driving is required. A few of the followers of this style of quadrant are: Stoddard, Stearns, Mitchell, Jackson, Overland, Regal, Speedwell, Kissel, Courier, Hudson, Thomas model M, Pierce-Racine, Pullman, Cadillac, Marmon, Apperson small model, Matheson six, E-M-F, Elmore, Ricketts; and in addition to these must be added Auburn, Velie, Reo and Chalmers, which do not use an H quadrant but have the change-speed lever in the same position for these speeds.

The second most popular design of H quadrant is No. 1 type reversed, in that second and high speeds are in the inside slot and reverse in low in the outside slot. The advantages of this type are practically the same as those in No. 1 and undoubtedly this has the additional advantage that having second and third speeds in the inner slot is a greater convenience, because the lever is closer to the driver and more readily handled. Adherents of this No. 2 type are Premier, Haynes, Buick, Pope-Hartford, Fal-car and Black Crow.

## Other Types of Positions

But there are more types of quadrant positions. In type No. 3, used on Inter-State and Rambler cars, low speed is in and forward, reverse in and back, second speed out and back, and high out and forward. This position is also used on the National.

An out-of-the-ordinary arrangement is No. 4, used on the Corbin and Columbia, which is simply the reverse of that used on the Inter-State and Rambler, and in which third or high is inside and forward, second inside and back, low outside and forward, reverse outside and back. On the Franklin low and second are inside, back,

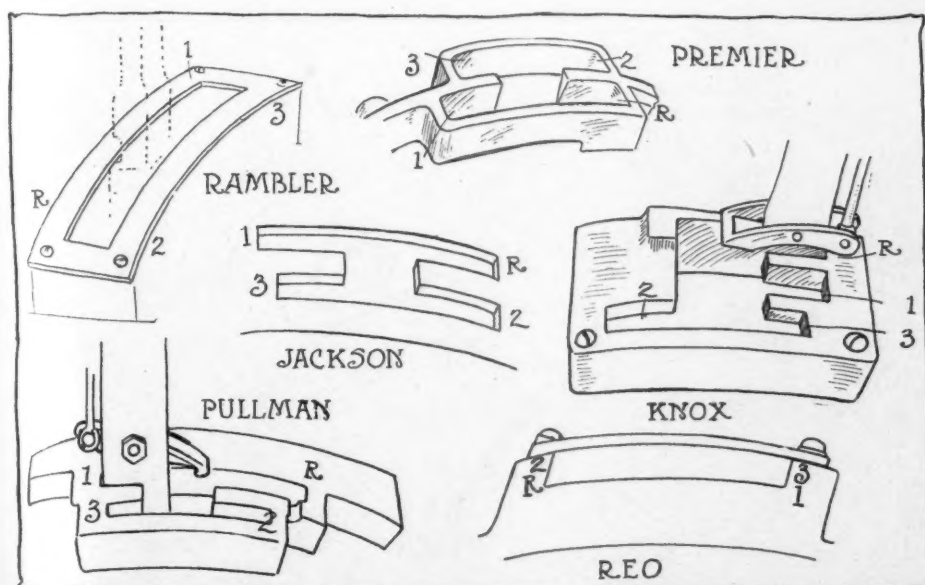


FIG. 4—EXAMPLES OF THREE-SPEED QUADRANTS

and inside forward respectively; and reverse outside forward, and outside back for high. The Franklin is the only example in which reverse and third are paired in the outside position, or in fact the only one in which reverse and high are paired in any position.

On four-speed gearsets the lack of regularity is as great as on three-speed types. A few examples of quadrants show this diversity. It is customary where there are four forward speeds to use a three-slot quadrant, but on the Pierce-Arrow and Locomobile two-slot types are used. On the Pierce No. 6 the inside slot is extra long with reverse at the front, low speed about the middle, and second speed at the rear—an arrangement which leaves third and fourth speeds in the outside slot. In the Locomobile quadrant No. 1 this order is reversed, having third and fourth speeds inside, and reverse, low and second in the long outside slot. All of the other cars using four-speed sets have three slots. The Peerless and Appersons are much alike, the reverse being a separate slot next to the car body, leaving first and second in the intermediate, and third and fourth in the outside slot. The only difference in these controls is that in Peerless No. 2 reverse is forward, whereas in Apperson No. 5 it is back. On the Winton cars the quad-

rant is the same as that in No. 1 system, excepting that fourth speed is in the third or outside quadrant and to the rear.

#### An Idea of Uniformity

This brief analysis is enough to show the diversity and to suggest some form of uniformity. Motor Age takes the liberty of suggesting a standard position for a three-speed gearset, and which is shown on page 37. In this H quadrant the inner slot has high-speed forward and second speed back; the outer slot has low speed forward and reverse back. There are many reasons why such a scheme as this, which is now used on the Corbin and Columbia, should be adopted. High and second speeds should be on the inside slot because the car is traveling faster with these speeds than with reverse and low and the lever should be in the most convenient and easily handled position, so that there is no interference with the work of the left hand in controlling the wheel. High speed should be ahead, or at the front end of the slot. This is the dynamic position. When a car is accelerating the entire mental condition of the driver is forward; the mental condition actually controls the movement of the muscles, and so in changing from the lower to higher speed the movement of the lever should be forward. When dropping from a higher to a lower speed, for the same reason, the lever movement should be back.

Regarding the reasons for low speed being outside and forward, and reverse outside and back, there is nothing of pressing importance excepting that there is little reason why the lever should not be pushed forward for low speed and backward for the reverse. This arrangement would at least be easy to remember, whereas it is unreasonable to push a lever forward in order to obtain a reverse movement.

With a gate or H quadrant of this design on all cars the list of accidents, which have occurred from time to time because

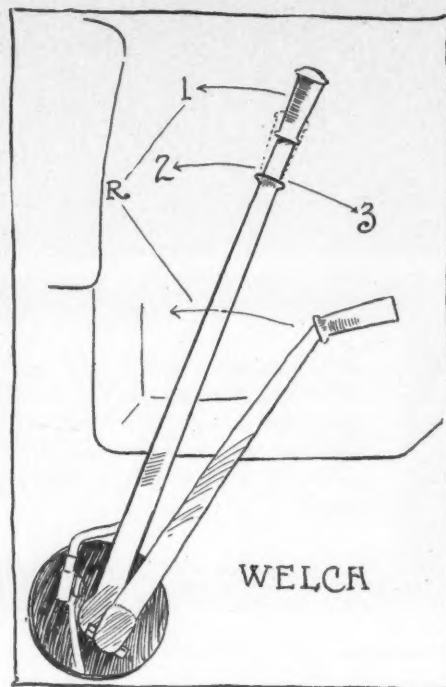


FIG. 7—THE WELCH CONTROL

of throwing in a forward speed, when the reverse was intended, or vice versa, would cease, and there would be no hardship imposed on the car builders. With a standardization of this nature it would not be necessary for a driver to have to spend some time accustoming himself to the new speed positions at a time when all his energies should be devoted to the proper control of the steering wheel and keeping the motor running at its most efficient speed, both of which are cardinal reasons for a standardization of control.

#### Standardization of Control

There are, however, demands for standardization of control in cars with progressive gearsets, as well as those with planetary sets. A few examples of unique types of controls will show the peculiarities. On the Chadwick, Fig. 5, with four forward speeds horizontal movement of the lever

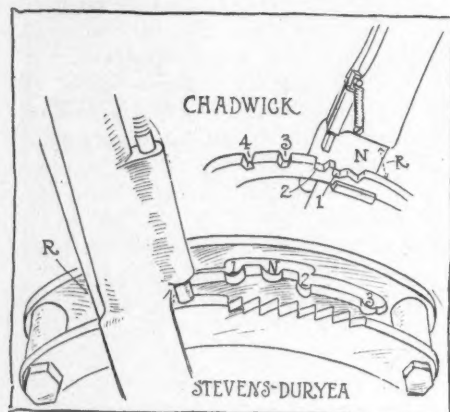


FIG. 5—TWO PROGRESSIVE TYPES

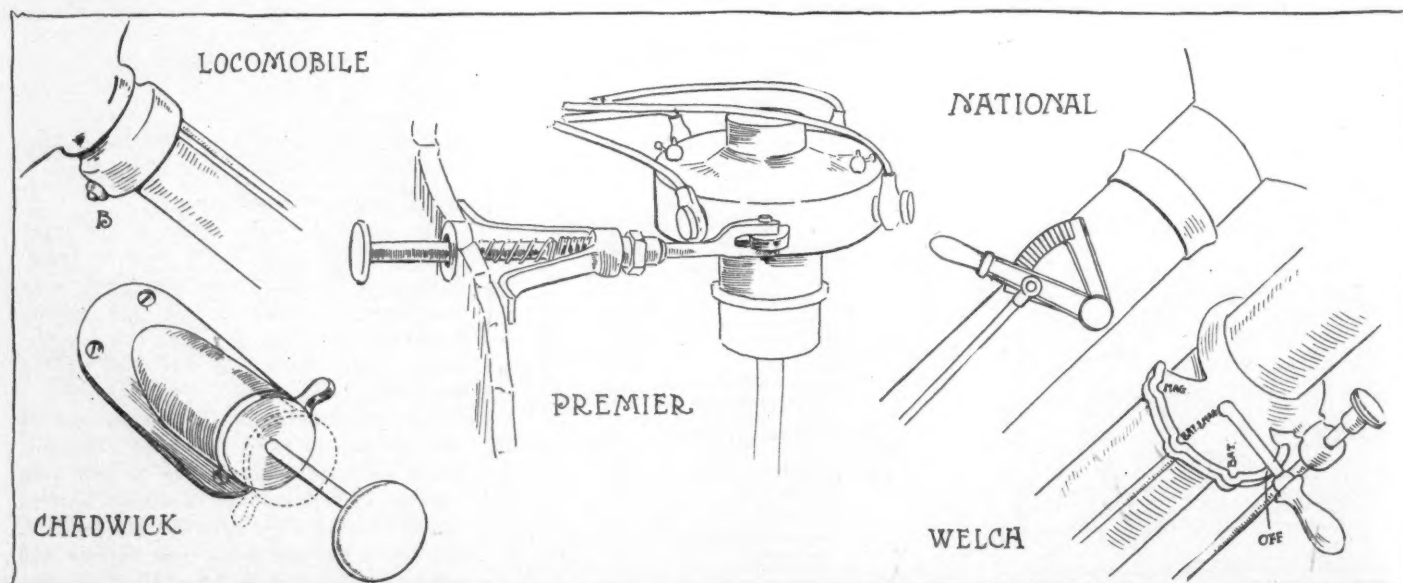


FIG. 6—FIVE OUT-OF-THE-ORDINARY IGNITION AND MIXTURE CONTROLS



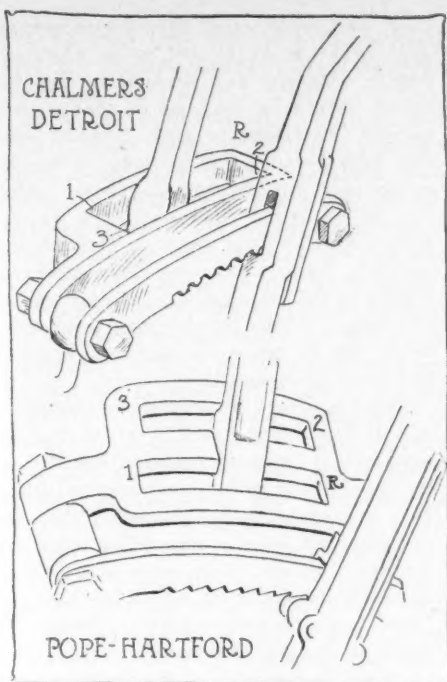


FIG. 8—GEAR-SHIFT QUADRANTS

gives reverse, and from neutral forward there is a regular progression of speeds until fourth speed is reached. In the Stevens-Duryea progressive design, Fig. 5, the lever is shown in reverse position R. Neutral position N is between first and second, so that a selective operation is permitted and high speed is forward. Owing to a peculiar curving of the edges of the quadrant notches the movement of the change-speed lever is greatly facilitated.

There is on a great many cars an enormous variety of what might be designated extra controls, that is controls on the dash, on the footboards, or on the steering column. A group of these are shown in Fig. 6. This shows the Locomobile cut-out switch on the steering column just beneath the wheel, B indicating the push button. Premier cars are fitted with make-

and-break ignition as well as with a jump-spark system. In order to make starting on compression possible an arrangement is made whereby a push button extending through the dash fastens to the commutator housing. Pressing on this button allows of the maximum movement of the timer so that it is possible to secure a spark on the desired cylinders. On National cars an air control is mounted on the steering column. The Welch, by an ingenious arrangement, mounts the switch conveniently on the column, the switch having the usual four positions, designated off, battery, magneto, and magneto-battery.

On the Chadwick roadsters a throttle is not mounted on the steering wheel, an accelerator being the only provision made. In order to facilitate starting a special arrangement is provided on the accelerator button so that by giving the handle a 180 degree turn, as shown by the dotted position, the throttle is opened enough for starting purposes.

#### Variety in Pedal Control

All kinds of variety are found in pedal controls, although it is sufficiently standard now to place the clutch pedal to the left and the brake pedal to the outside. It is questionable if any other feature of control is more standardized than this. In the matter of accelerator pedals more diversity appears. The accelerator is an invention of the last 2 or 3 years and is a wonderful accommodation in driving, as it eliminates the necessity of frequent change of the throttle control on the steering wheel at such times as changing speeds or turning corners. With the accelerator it is possible to reduce the engine speed to the most advantageous point. Some makers refuse to fit accelerators, claiming as they do that they are an injury to the motor, in that the throttle is suddenly opened to its limit in starting for a quick get-away, which is very injurious to tires.

One feature of accelerator design, which is overlooked, is that the position of the

accelerator should not call for keeping the toe of the shoe high in the air, which cramps the instep. In such a position, if running over rough roads, it is impossible to keep the pedal steady and the engine is constantly racing or slowing with disastrous results. An accelerator pedal should permit of the foot being braced so that the control is steady no matter how rough the road. This is possible with some types, notably the Corbin, Oakland and Chalmers, two of which are illustrated. In these the accelerator A is moved to the left for an open throttle, leaving the sole of the shoe firm on the footboard for a brace. In the Rambler design this same uniformity of control is possible although the throttle is a fan-shaped one. On the E-M-F a push type of accelerator is used; on the Maxwell the pressure type is adopted, but it does not call for a high elevation of the foot.

#### Applying Emergency Brake

A few years ago it was customary to push forward in order to apply the emergency brake. At that time manufacturers argued that it was correct, but they have since realized the error of their ways, and now there is scarcely an example of an emergency brake which is applied by forward movement. It is dynamically correct to pull the emergency brake lever

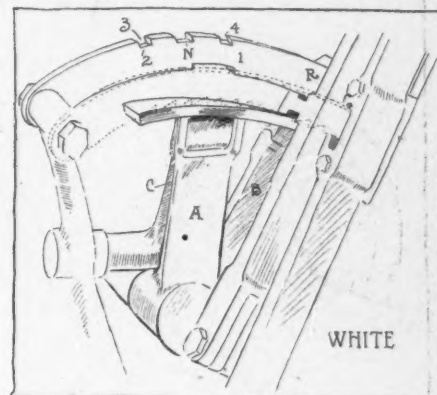


FIG. 10—THE WHITE CONTROL

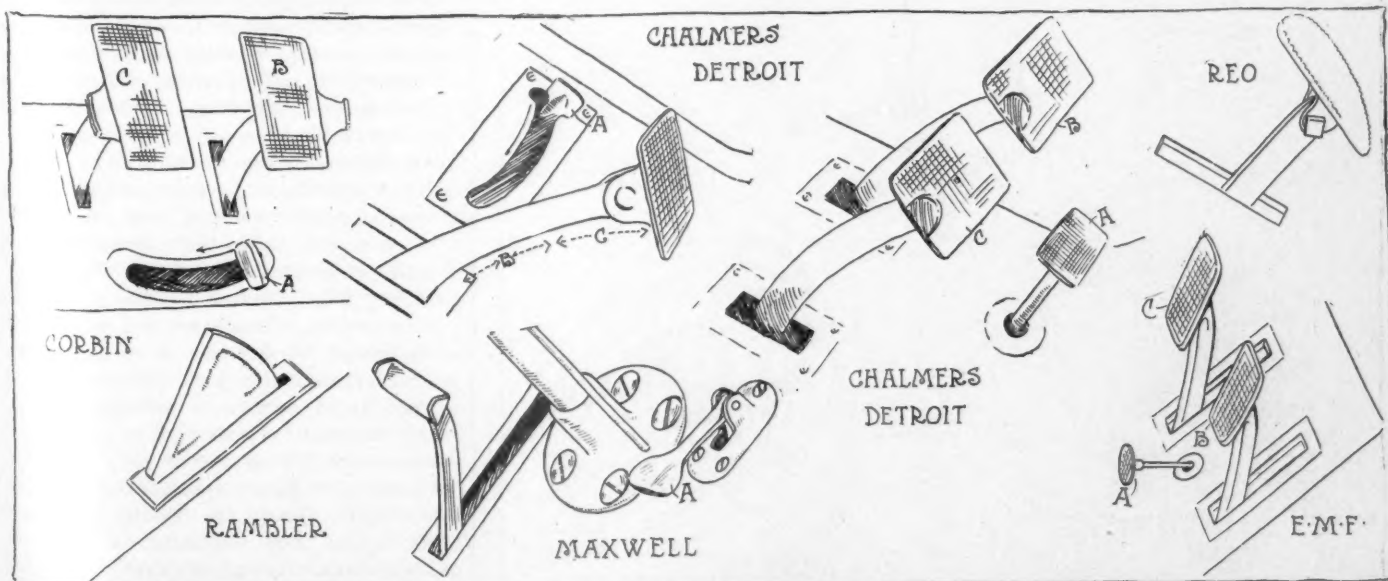


FIG. 9—VARIOUS TYPES OF ACCELERATORS AND PEDALS FOR CAR CONTROL

## Different Types of Motor Controls

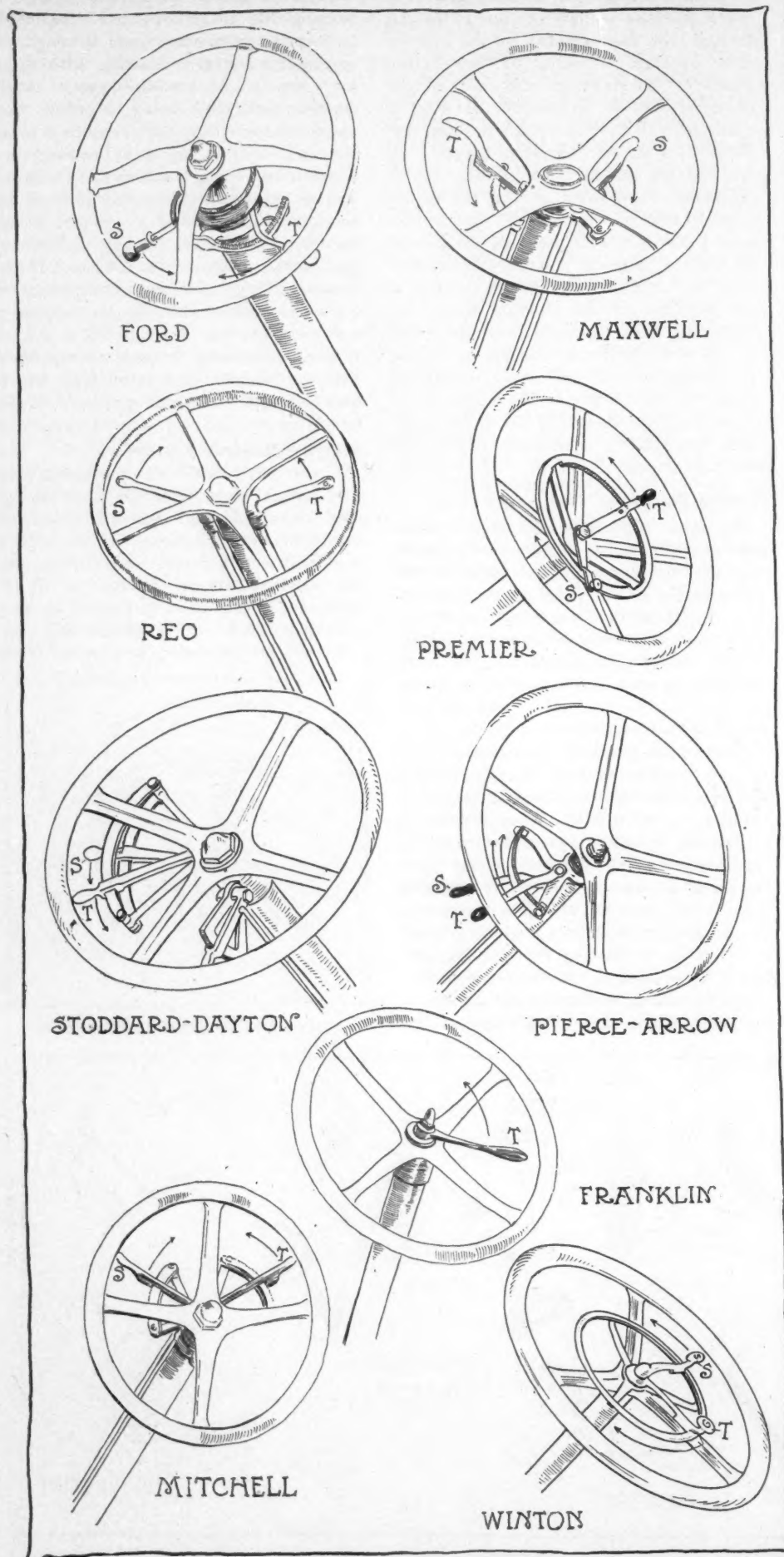


FIG. 11

back and pushing it forward is wrong. This brake is only used when a sudden stop is necessary and when it is used the clutch should be released so that it is a natural movement to push forward with one foot on the clutch pedal with the other foot on the service brake pedal, and at the same time pull back on the brake lever. This position brings the driver's body away from the steering wheel, so that in case a collision occurred the danger of the driver being injured by being thrown upon the steering wheel is to an extent lessened.

There is a lack of consistency, however, in this emergency brake lever, in that on some cars it is placed inside of the change-speed lever, the reason for which not being very apparent. It is a certainty that the change-speed lever is used much more frequently than the brake lever and as such should be in the more accessible position. There is another advantage in having the brake lever pull backwards, namely, that when not in use, it is to the front and out of the way, whereas if pushed forward in applying the brake lever when not in use is back towards the seat and in the way of the gearshift-lever.

Lastly, in this matter of control diversity as exemplified at the Coliseum show, comes the problem of throttle and spark control on the steering column. As already stated, it is impossible to classify the systems used, except in rough divisions such as those controls which are above the wheel, those which are beneath it, where both are on the right side, where both are on the left, where one is on the right, the other on the left, and where the direction of advance is forward on one, back on another, and in third forward to advance the spark but back to open the throttle.

### Spark and Throttle Arrangement

The most conventional arrangement on spark and throttle control is that where they are both mounted above the wheel and at the right, their movement along a semi-circular quadrant, with notches of some nature whereby they may be anchored in any position. The throttle lever is invariably longer. The spark lever is short. Concerns using this arrangement are Elmore, Speedwell, Glide, Fal-car, Hudson, Overland and Ricketts, on all of which to advance the spark or open the throttle these control levers are carried forward, which is dynamically correct. On the Kissel car, Regal, Auburn and Black Crow the arrangement is the same, but to advance the spark, or open the throttle, they are brought back or towards the driver. The majority of users favor pushing these controls forward to accelerate, for the same reason that the gear-shift lever is pushed forward for higher speeds. Should a person want to close the throttle and retard the spark very hurriedly, it would be natural that he might want to drop to lower speed and disengage the clutch in, which position the body would be thrown



back or away from the wheel, which would give the natural movement as backwards on everything.

In all of the illustrations, Figs. 11 and 12, in these pages T indicates throttle lever, S spark lever, and the arrow indicates the direction of movement for advancing speed. The Apperson shows a step from the conventional in that the throttle and spark move over a one-quarter circle, the throttle being pulled down to open and the spark pushed forward to advance, so that the higher the speeds the farther are these controls apart. On the White a reversal of this arrangement is used, the throttle being pushed forward and the spark backwards for advancement. On the Knox and Pope-Hartford both are pulled towards the driver to advance. The Knox is different from the ordinary in that the throttle is the shorter control lever and on the inside of the quadrant. The reason for this is that the accelerator is used when driving the car so that the hand control is practically eliminated. The Welch belongs to this class of control, but in it the spark and throttle move in opposite directions and approach each other in the advance position. This brings both under the control of one hand at high speeds.

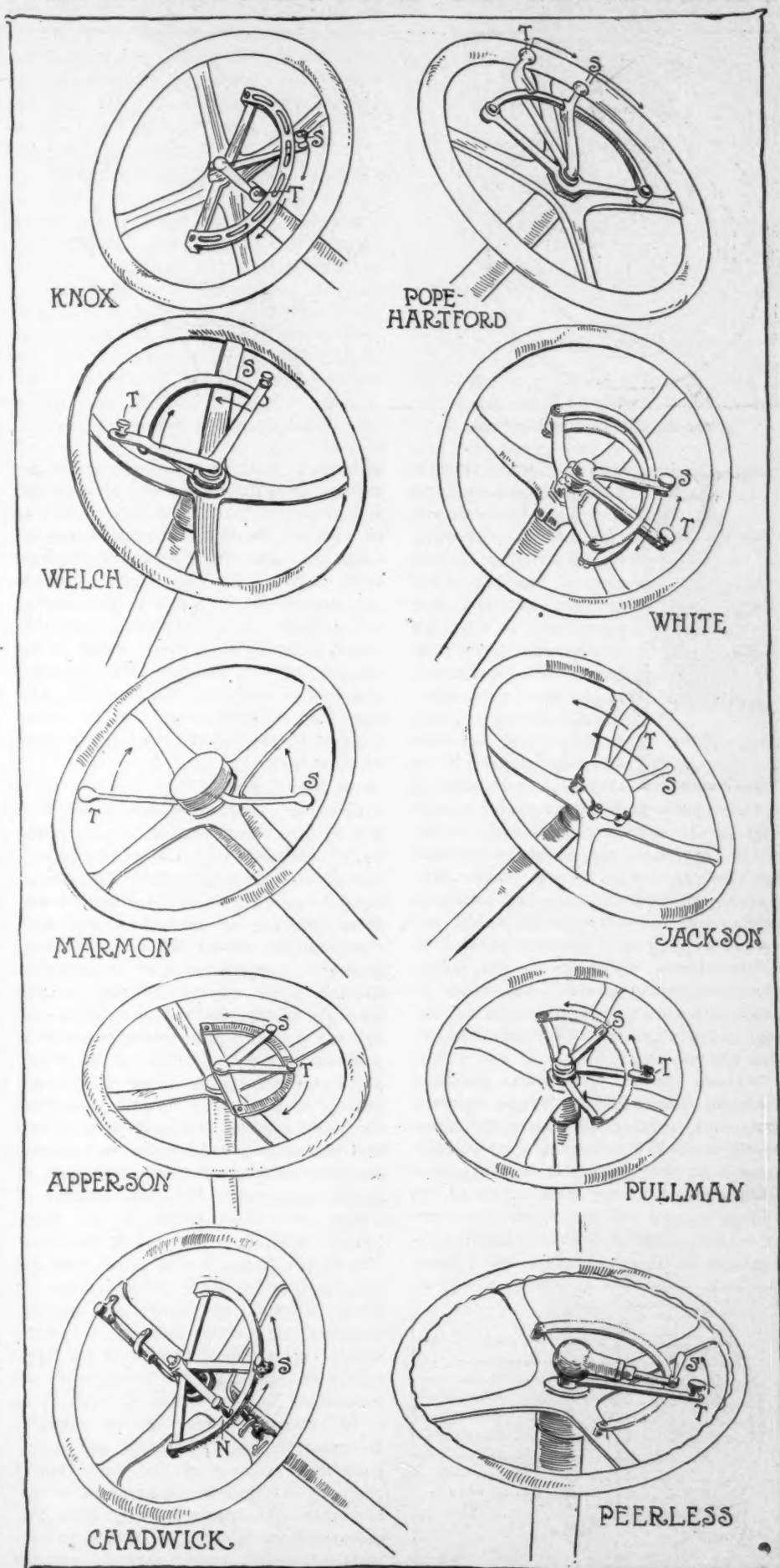
#### Controls on Opposite Sides

There are many makers who place the controls on opposite sides, the spark on one side and the throttle opposite. In this class can be noted the Marmon, Mitchell, Reo, Premier, Maxwell and Ford. On these it is general to place the throttle on the right side, excepting in the case of Marmon, in which the throttle control is long, so that it can be operated by the thumb of the left hand without taking the fingers off the steering wheel. The Franklin has but a single control for the throttle, the spark being under the governor control.

Two cars place both throttle and spark beneath the steering wheel at the left side, these are Pierce-Arrow and Stoddard-Dayton. The advantages claimed by exponents of these cars is that it is possible to control both by the fingers of the left hand without releasing the hand from the steering wheel, in which case the right hand is left free to control the change-speed lever. Exponents of all high-speed work claim it is not necessary to need the right hand for this work and in reply it might be stated that the gearset is put in for a purpose and why not use it, and by so doing keep the motor running at a more uniform speed.

At present it would seem impossible to draft any standardized arrangement for spark and throttle control. Every maker has some reason to offer for his particular arrangement, and, in fact, it makes a difference on the position of these if an accelerator is used. The majority of drivers hold the steering wheel with the left hand, leaving the right hand free to use the change-speed lever and control the spark

## Different Types of Motor Controls



(Continued on Page 47.)

FIG. 12

# FEATURES OF DESIGN IN THE NEW LAMP CROP

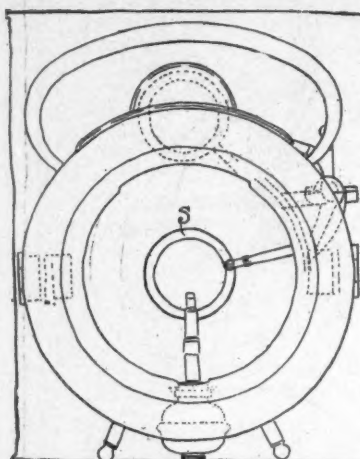


FIG. 1A—SOLARCLIPSE SHUTTER

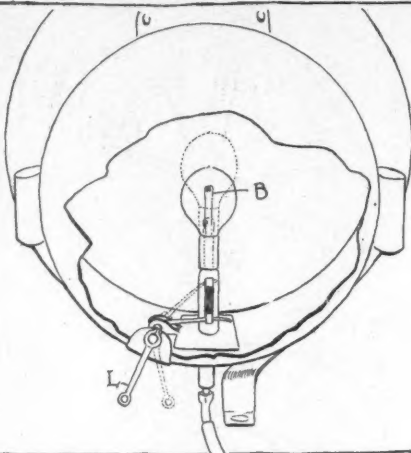


FIG. 2—SOLAR RAYDEFLECTOR

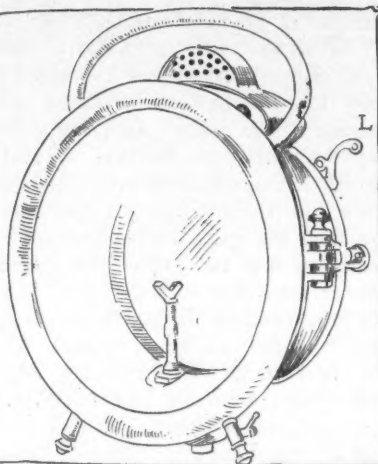


FIG. 1B—LEVER FOR SOLARCLIPSE SHUTTER



REVIEW of the trend in motor car lighting facilities for 1910, shows several marked tendencies, among which are: a pronounced increase in the use of electricity, improvements in design which render the principles of illumination employed more scientifically correct—more in harmony with the laws of optics; progress in the arrangement of eclipsing

devices, permanent and accessible mountings in the combination oil and electric, oil and acetylene, and acetylene and electric lamps; fewer corners, angles and folds, to facilitate cleaning and polishing; refinements in workmanship, finish, and assembly; a greater production of dull-finished lamps, which are modest in appearance, equally efficient, and easier to keep clean; and improvements in the design and arrangement of brackets, sockets, door-latches, etc.

Whereas the use of acetylene gas as a headlight illuminant still reigns supreme, for country driving and touring, the recent development in the incandescent electric lamp field, the improvements which have been wrought in the construction of the storage battery and mechanical generators of current, together with the superior advantages of their operation and upkeep,

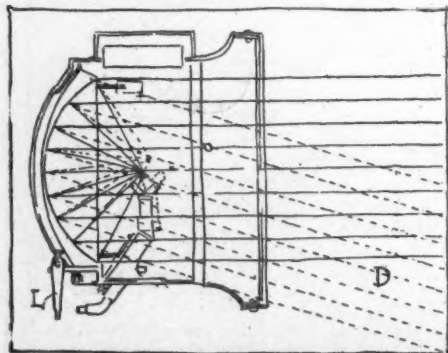


FIG. 3—SOLAR RAYDEFLECTOR

have to a great extent displaced the gas and oil lamps for the lighting of town cars and threatens their use in country driving as well. Of the three illuminants thus far found practical for motor car lamps, however, all have their advantages. The common kerosene-oil burner is simple, economical, reliable, its fuel universally available, and it gives good service in many of the cheaper as well the expensive constructions. The acetylene gas lamp is a brilliant light of great power, capable of being readily maintained from a storage tank or generator.

## Gives Best Light

From an illuminating standpoint, it is perhaps the most efficient of the three, but as compared with the electric light it has several disadvantages. The electric lamp gives a light which is more nearly ideal than any of the others, and when obtaining its current from a mechanical generator, requires little or no attention. Electric lights may derive their current from the ignition battery, a separate storage battery, or a mechanical generator or dynamo; and all of these, which in previous years gave more or less trouble, are now developed. Electricity is recognized the world over as the most perfect form of illumination. Its application to motor cars has been retarded only by a lack of proper appliances. The total absence of flicker and unsteadiness in the flame lessens the strain on the eyes of the driver. The danger of fire is eliminated, there are no objectionable odors, cracked lenses, or sooty reflectors, and above all, the convenience of merely touching a switch within easy reach of the driver for lighting or extinguishing the lamps, adds immeasurably to the comfort of motoring at night. Storage batteries are now specially designed for lighting purposes, and in proportion to the rate of discharge, that is they are designed to discharge more rapidly than was required for ignition purposes, without injury to the plates, and are installed, with more regard for the capacity best fitted to the number and

size of lamps in the system. This, in connection with the introduction of durable tantalum and tungsten lamps of high efficiency, with which a current consumption as low as 1 watt to the candlepower suffices, as against the  $3\frac{1}{2}$  watts consumption of the ordinary carbon filament lamp, has contributed much toward the success of electric lighting of motor cars.

## Electric Lamp Practical

One feature of the electric lamp to which much of its success as a headlight is due, is the fact that it makes practical, the use of the paraboloid reflector, the only form of mirror that can project in an absolutely parallel beam all of the rays that fall upon it. With a simple paraboloid reflector, about 89 percent of the light given off can be projected, while with the simple lens mirror and the supplementary reflectors used in combination with it, the amount of light projected varies between 12 and 50 per cent, the balance being absorbed by the blackened sides of the lamp. A paraboloid reflector cannot be used with a gasoline lamp because of the large area and intense heat of the flame; it could not be properly focused without bringing it too close to the reflector and burning it, or without cutting a piece out of the top, above the flame, which would leave an undesirable dark spot in the beam of light projected.

Now notwithstanding the shortcomings of the acetylene gas lamp, a number of

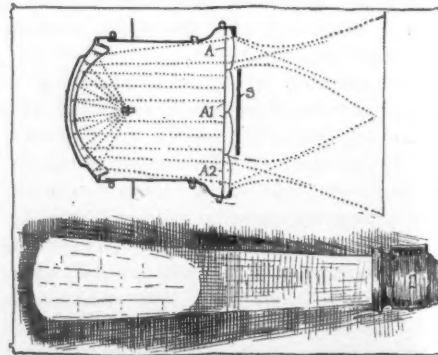


FIG. 4—NON-FICKERING SEARCHLIGHT



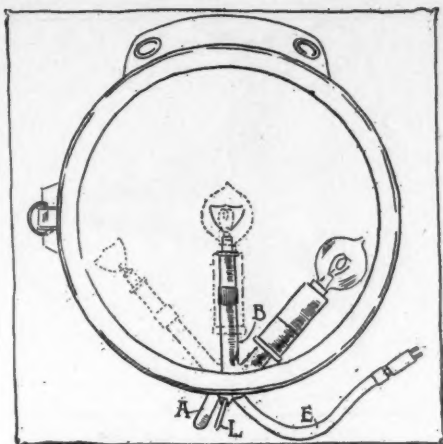


FIG. 5—SOLAR GAS-ELECTRIC LAMP

improvements have been made which overcome many of the undesirable features; and as an efficient source of powerful projected light, its reputation is unquestionable. To overcome the offensive glare which has such a blinding effect upon the eyes of an approaching driver, several methods are now employed by the various manufacturers of deflecting or intercepting the dazzling beams of light. Two such systems are employed by the Badger Brass Mfg. Co. One system known as the Solarclipse brought out last year and shown in Fig. 1A consists of a tin shutter S on the end of a lever that may be turned down behind the flame so as to entirely shut off the light from the powerful lens mirror at the back of the lamp. These shutters are both operated at will from the driver's seat by means of a Bowden wire attached to lever L in Fig. 1B. The other system Fig. 2 and known as the Solar Raydeflector consists of a means of raising the entire acetylene burner B about an inch, and at the same time moving it forward out of the focal point of the mirror, so that the rays are deflected downward as designated by the beam D in Fig. 3. The control in this system is similar to that of the Solarclipse, the lever L constituting it.

Another interesting method of limiting the projected beam so that it does not dazzle the eyes of an approaching driver, is to be found in the so-called Non-Flickering Multiplex searchlight manufactured by the Rushmore Dynamo Works. In the non-

flickering searchlights, the glass strips in the front door is replaced with heavier strips, A A1, A 2, 2 inches wide which are flat on the rear side, whereas the front side is accurately ground and polished to a convex curvature. These lens strips spread the light out in a horizontal plane only, as shown in Fig. 4.

#### Combination Lamps

A prominent feature in lamp construction this year is that of the combination oil-electric, oil-acetylene, and acetylene-electric types. Fig. 5 shows the arrangement and operation of the Badger Brass company's device for combining gas and electricity in all Solar lens mirror headlights. Gas may be used for country driving, or the tungsten electric bulb can be swung and locked into focus for city use without disturbing the wiring or gas connection. Both lights, the acetylene and electric, are mounted in one V-shaped bracket B which swings on a trunnion in the base of the lamp casing, and under control of a handle L of a latch which locks the bracket in either acetylene or electric positions. The electric connection is marked E and acetylene tube A. Each burner when in use is in the vertical position and properly focused. An electric burner can be as advantageously used as an acetylene burner in a lamp designed for acetylene use; but it is impossible to adapt an acetylene burner to a lamp especially designed for electricity because of the paraboloid reflector used in the electric type.

In Fig. 7 the arrangement of one of the combination oil-acetylene side lamps manufactured by the C. T. Ham Mfg. Co. is illustrated. The acetylene burner B is in unit with the kerosene oil burner B1 and located directly behind it. The lamp is provided with two doors, which render the burners very accessible and greatly facilitate cleaning. Two different styles of the Ham company's combination oil-electric lamps are shown in Figs 8 and 9. In Fig. 8 the electric lamp is suspended in the upper inside corner, where it may be readily reached in case the bulb should need tightening or replacement, and the socket for connecting it up protrudes slightly from the outside of the same cor-

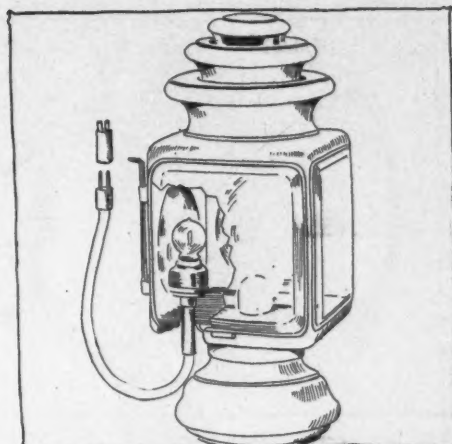


FIG. 6—WITHERBEE COMBINATION LAMP

ner of the lamp. Another style is given in Fig. 9, in which the electric bulb hangs down just in front of the mirror of the rear door when it is closed. It is more than an inch behind the oil burner, and in a most accessible position.

Special attention is called to the cold blast principle of admitting air in these lamps. As indicated by the arrows, the air enters the lamp at the holes near the top, passes down between the metal lining and the outer walls, and issues into the interior of the lamp through the holes around the base of the burner. The advantages of this construction are: that with the doors closed ample air is supplied to prevent smoking, the air admitted is warm and dry so that condensation of moisture on the glass is eliminated, and owing to the indirect course of the draft the flame cannot be blown out.

#### Converting Old Lamps

In the year passed, many regular oil side and tail lamps have been converted into the combination type by equipping them with electric attachments. One Witherbee method of conversion is illustrated in Fig. 6; and consists of simply boring through the bottom of the lamp directly behind the oil burner, inserting the electric lamp socket and then soldering it securely into place.

There are many different kinds of adapters on the market, several types of which are shown in Fig. 10. These require no boring or soldering in their attachment, as

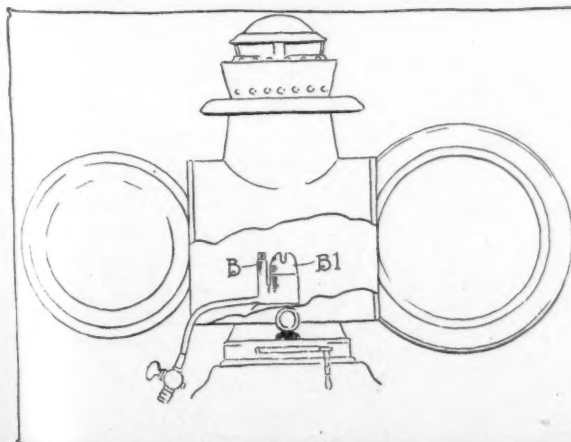


FIG. 7—HAM'S OIL-ACETYLENE BURNER

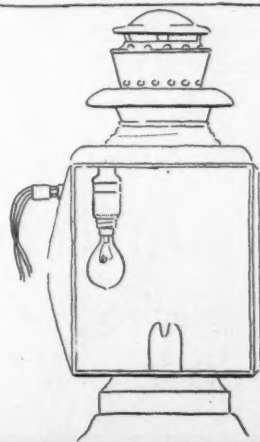


FIG. 8—HAM'S COMBINATION LAMP

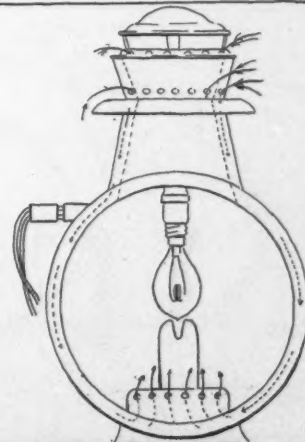


FIG. 9—HAM'S COLD-BLAST SCHEME

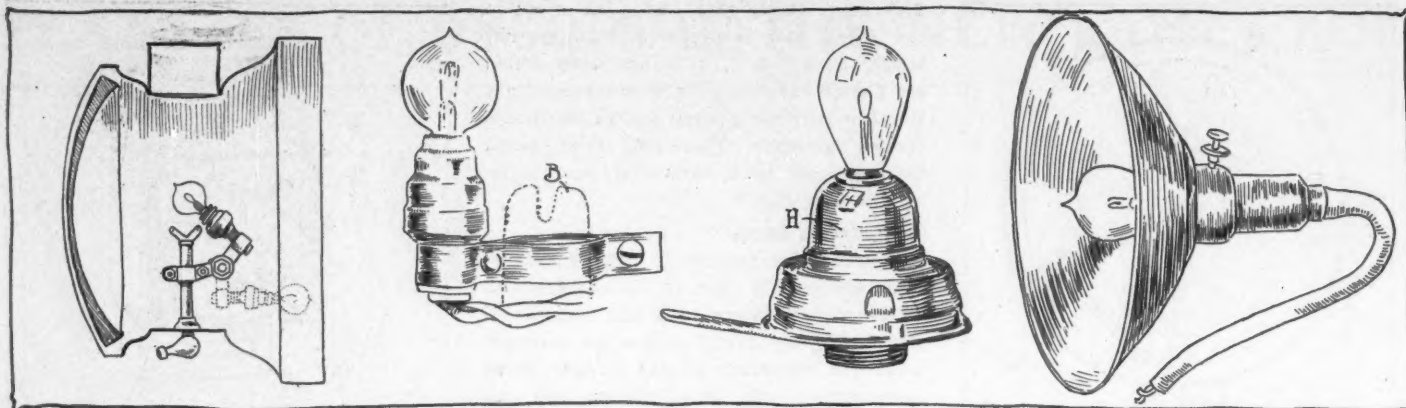


FIG. 10—PART A—GRAY &amp; DAVIS' TYPE PART B—STANDARD ADAPTER PART C—ADAPTER DESIGN

PART D—ELECTRIC ADAPTER

they are clamped to the oil or acetylene burner, or screwed into the oil well instead of the oil burned in Fig. 10. In part A, a Gray & Davis adaptation now in its second year, the electric bulb hinges on a bracket which clamps to the body of the acetylene burner, and when in use is directly above the former and when not needed swings forward or sidewise, whichever is the more convenient. Part B shows a standard design of electric adapter handled by many concerns. The electric burner is held in a bracket which clamps around the oil burner, the oil burner being indicated by dotted lines. In part C the electric bulb is carried in a holder H similar in appearance to the oil burner which it replaces. In this design only one can be fitted at a time, whereas in parts A and B both electric and acetylene burners are carried in the lamp at once. In part D is shown an electric bulb with its paraboloid, which reflector fits into the lamp door, immediately behind the lens, and in a position similar to that shown in Fig. 11. **Simple and Ingenious**

A simple and ingenious method of converting a gas headlight into an electric headlight is shown in Fig. 11. A true paraboloid reflector R, made of spun copper silvered on the inside, carries an adjustable socket at the center for insertion of a small electric light bulb, and the socket is suitably wired and fitted with a handy connector all in unit construction. This assembly can be simply set into the body of the lamp through the door in front

and connection established through the airtight. This means of excluding dust or ventilating holes in the bottom, the reflector moisture makes it possible to maintain the door being held in place by a split ring H, high polished surface of the reflector, and which fits into a groove in the body of the lamp. It may be removed or replaced at the lamp.

will, and when not in use can be stored in. Although the door latches generally provided are all that is to be desired, a new

Almost all manufacturers using the one is to be seen on the Rushmore product, paraboloid reflector provide some means a sketch of which is given in Fig. 14. No of focusing the light, and it is surprising screwing or unscrewing is required with the remarkable difference in the strength of this device, it being merely necessary when of the beam obtained when the light is the door is closed to lift or close down the moved back or forth a fraction of an inch latch L which hinges on the bracket B on away from the focal point. The focusing of the door of the lamp. This bracket registration arrangement handled by the Witherbees with a similar bracket B1 on the body company is reproduced in Fig. 13, and is of the lamp, and when it is desired to open comprised of hard rubber socket S cylindrical in form, held between three broad leaf springs L in which it is free to be moved back and forth. Another form adopted by this company and by the Vesta company as well, is somewhat similar in operation, but the socket is contained in a spindle which is threaded on the inside and operated by a screw having a thrust bearing in the shell of the lamp; a knurled head is attached to the outer end of the screw so that the lamp may be focused from the outside and without covering the light with the hand.

#### The Badger Electric Headlight

The Badger Brass Co.'s electric headlight is shown in Fig. 12. It is most simple and graceful in design, is fitted with a true paraboloid reflector R held in place by four screws, and a rubber gasket is fitted in the door so that it is rendered

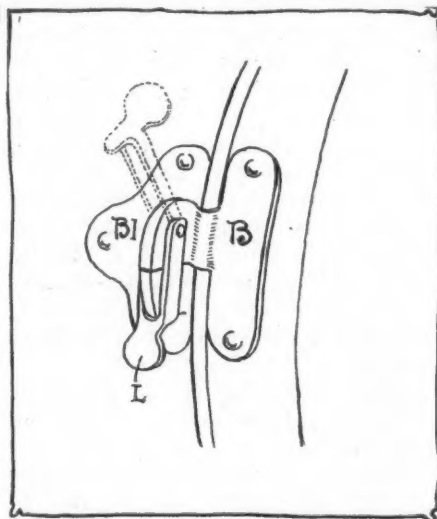


FIG. 14—NEW TYPE OF DOOR LATCH

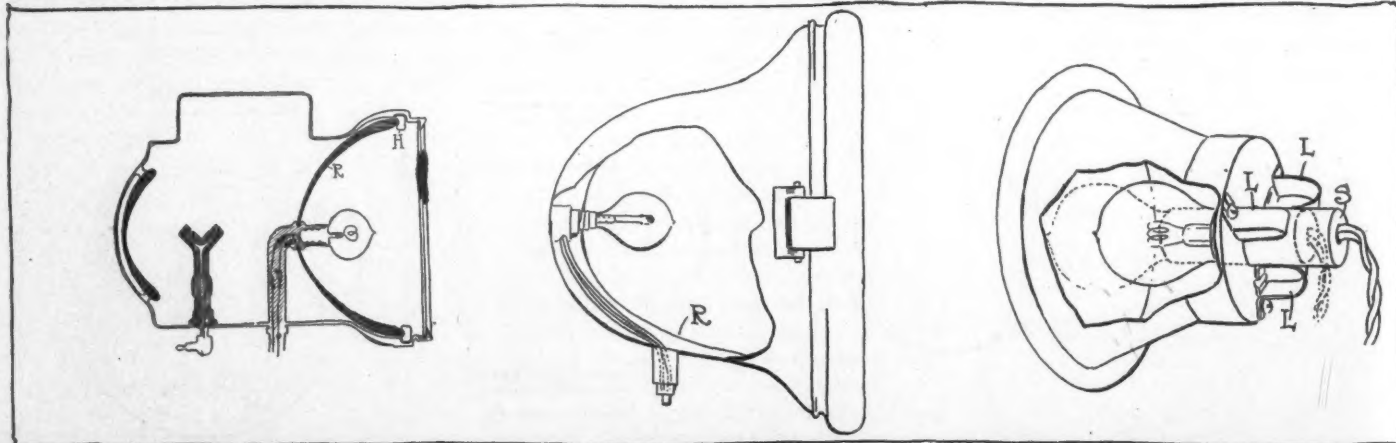


FIG. 11—A CONVERTIBLE TYPE OF LAMP

FIG. 12—SOLAR ELECTRIC HEADLIGHT

FIG. 13—WITHERBEE ADJUSTABLE FOCUS



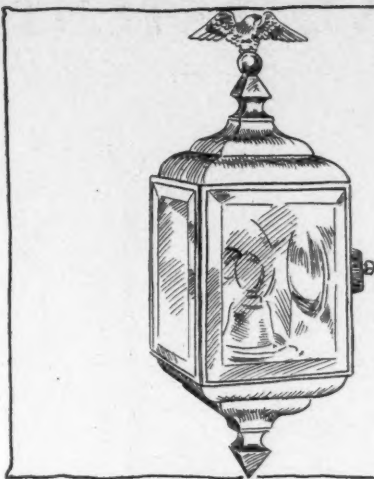


FIG. 16—VESTA LAMP



FIG. 17—COWLE'S LAMP

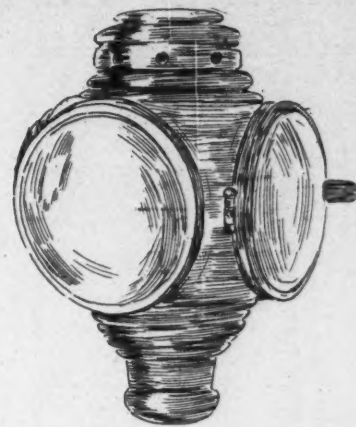


FIG. 18—COWLE'S LAMP

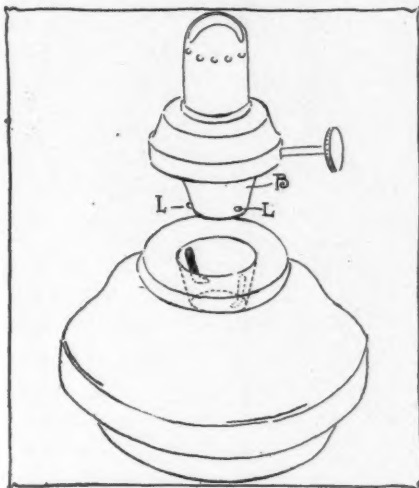


FIG. 15—E. &amp; J. ATTACHMENT

indicated by the dotted lines as shown.

An innovation is also found in the attachment of the oil-burner in the Edmunds & Jones company's product, Fig. 15. Instead of screwing the burner into place in the conventional manner, the base B of the burner which fits in the oil well, is cone-shaped and provided with two lugs L that fit into slots in the cone-shaped recess in the body of the lamp. To replace the burner after filling the reservoir with oil, one has but to slip it into place, and give it a slight turn to the right; the upper

edge of the leg at the lower end of the slots, slants downward, so that the harder the burner is turned to the right, the tighter the joint.

A vast improvement is to be found in the design of the lamps lighted by electricity only, as may be readily seen on reviewing the exhibits of the Vesta or Cowles Co. One of the artistic pillar lamps of the Vesta company is shown in Fig. 16, and a pillar, a tail and a three-lamp cluster dome light, handled by C. Cowles & Co., are illustrated in Figs. 17, 18 and 19 respectively.

#### Improvements Noted

For neat and simple beauty these are certainly a stride in advance of the oil lamp with its large handle, chimney and reservoir, all of which may be dispensed with in the electric. Two types of gauge lamps handled by several dealers are shown in Figs. 20 and 21. These are for use on the dash of a motor car, and are operated by a small switch convenient to the driver, or fitted with a pull-chain socket as illustrated, and at night enables him to see the various devices on the dash such as the oiler, clock, speedometer, etc. They are made in various shapes and sizes. Fig. 22 represents a conventional type of connector for electric lamps. These double connectors are especially adapted for attaching and detaching tail, side and head-

lights, without disconnecting the wires.

The Gray & Davis Co. has perhaps given as much thought to the subject of electric lighting as any American manufacturer. For the greater portion of the last year it has been experimenting along this line, and has employed in consultation a well-known electrical engineer who has been successful in perfecting a system of railway car lighting in which the dynamo is driven from the car wheels. The result has been the production of a system adapted to operate both the head, side and tail lamps of motor cars as well as an electric horn and gauge lights, and, in case of closed cars, interior lights. The dynamo used is of the so-called ironclad type being entirely enclosed, and is designed so as to be well ventilated and cooled. It is of the constant speed type, and is regulated by means of a centrifugal governor operating on a plate clutch. The outfit also comprises a cut-out box, on which is mounted a combination volt-ammeter. The box contains one cut-out which cuts the dynamo out of circuit when it is standing still or when the speed is too low, and another which cuts it out of action when the battery is fully charged. Comparative tests have also been made by this firm with the paraboloid reflectors fitted with electric

(Continued on Page 57.)

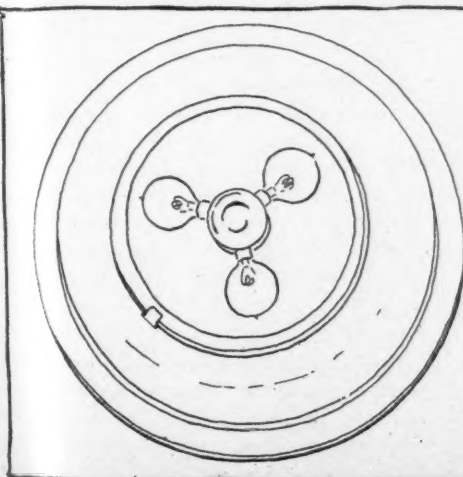


FIG. 19—COWLE'S LAMP



FIG. 20—GAUGE LAMP

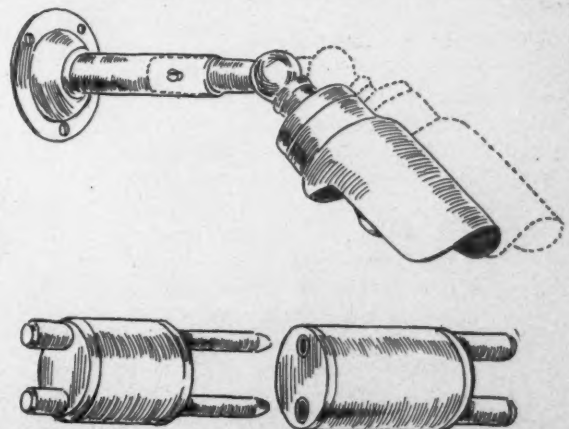


FIG. 21—GAUGE LAMP

FIG. 22—ELECTRIC CONNECTOR

# PACKARD CLAIMS SLIDING-VALVE PATENTS

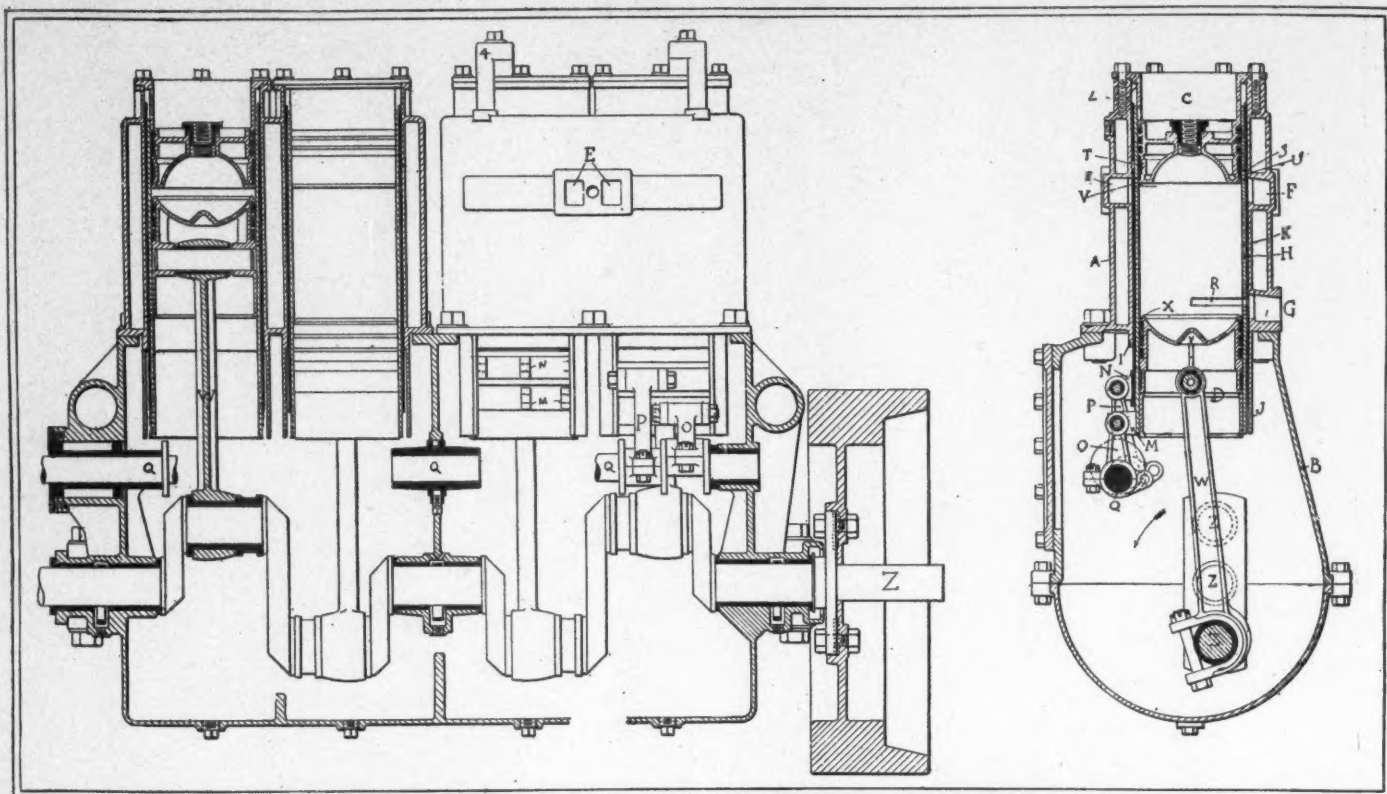


ILLUSTRATION OF KNIGHT SLIDE-VALVE MOTOR, PUBLISHED IN MOTOR AGE IN 1905

**D**ETROIT, MICH., Feb. 9—A considerable furore in motoring circles was occasioned here today by the announcement made by a representative of the Packard company to the effect that that concern controls basic patents covering the slide-valve or double-sleeve valve type of motor, the report going still further to state the Knight motor is an infringement of the patent the Packard company controls. It appears that the patent in the possession of the Packard company was one for which application was made in 1901 by Sidney A. Reeve and which patent was re-issued letters patent No. 12,991. The report further states that Charles Y. Knight, inventor of the Knight motor, which has been introduced in England, France, Germany and Belgium, controls no United States patents covering the construction of the motor.

## Development of Knight Motor

The Knight motor was introduced commercially in America in 1905 by Knight & Kilbourne, Chicago, which concern engaged in the manufacture of this motor up to the present. In November, 1907, Inventor Knight took his motor to England, where license for its manufacture has been purchased by the Daimler company, which concern is now manufacturing this motor and using it exclusively in all of its models. The motor was later adopted by the Panhard company, of France; the Mercedes company, of Germany, and the Minerva company, of Belgium. The success following the use of this motor abroad as a substitute for the standard

## By Paul H. Bruske

form of poppet-valve engine resulted in an effort to introduce the motor into this country and it is a matter of apparent rumor that several of the larger American concerns have investigated the matter carefully with this object in view.

### Claims No American Patent

The exact basis on which the Knight interests wish to introduce the engine among American motor car manufacturers has never been publicly stated. It is known,

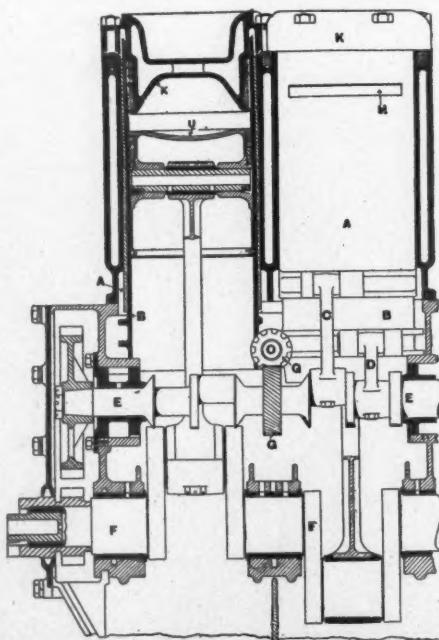
however, the Packard representative states, that no United States patents on this type of motor have been granted to Charles Y. Knight, although it is generally understood that applications for patents are now pending. Such patents necessarily would be subordinate to the Reeve patent.

Now comes the surprising fact that among the numerous patents in the control of the Packard company is re-issued letters patent No. 12,991, granted to Sidney A. Reeve and for which the original application was filed September 20, 1901. The claims of this patent, it is reported, not only broadly cover engines of the double-sleeve-valve type, but the actual construction of the Knight engine as it was made in this country and the later improved design of the Daimler company.

The Packard company, naturally conservative in the matter of publicity, is reticent upon the subject. A representative interviewed by Motor Age said that the facts in the case speak for themselves and that there was little to add except that the Packard company is not greatly interested in sleeve-valve motors beyond general experiment such as has been applied to a whole lot of things that were never adopted.

### Features of the Motor

The essential features of a sleeve-valve motor, such as the Daimler, are the outer cylinder, the piston and the two sleeves operating between the cylinder and the piston and having ports adapted to register at the proper times to permit the



KNIGHT-DAIMLER MOTOR



charge to enter the cylinder and the exhaust gases to be expelled. These valve sleeves are moved up and down by eccentrics on a shaft arranged parallel with the motor crankshaft and this eccentricshaft is driven by half-time gearing, similar to the camshaft of an ordinary poppet-valve motor.

The sleeves are so timed in their operation that when the piston starts to descend on the intake stroke, the ports on the intake side of the sleeve are just coming into register with each other and with the inlet port of the cylinder. These three ports remain in register during this entire stroke of the piston. On the compression stroke, the sleeves have moved sufficiently, relative to each other and to the inlet port, so that none of the ports of the motor are in register during the compression stroke and the greater part of the firing stroke. At the end of this period, the ports on the exhaust side of the sleeves come into register with each other and with the exhaust port in the cylinder and remain so until the end of the exhaust stroke, allowing the exhaust gases to be expelled by the piston. The cycle is then repeated. In function, it is exactly the same as the cycle of the ordinary poppet-valve motor.

As compared with the motor built by Mr. Knight in this country in 1905 and described in *Motor Age* of October 26, 1905, the Daimler motor has omitted the offset crankshaft feature of the earlier model and uses but one exhaust port, where the earlier model used both main and auxiliary exhaust ports. Aside from these differences there are detail changes of refinement which are unimportant.

#### The Reeve Patent

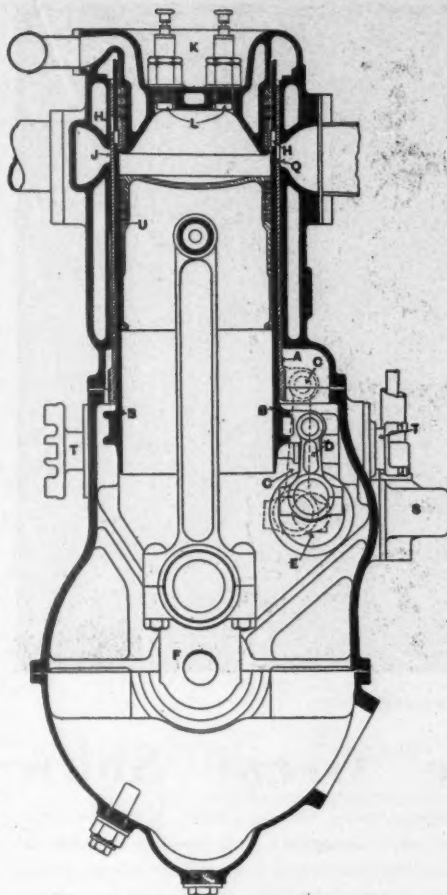
Referring now to the Reeve re-issued patent No. 12,991, the original application for which was filed September 20, 1901, it seems that twenty-five or more of the sixty-four claims in the patent cover practically all motors in which there are two sleeves sliding between the piston and the cylinder and controlling the inlet and outlet ports of the cylinder. One of the simplest of these claims is No. 36, as follows:

"The combination of a casing, a reciprocating piston, and two cylindrical valves surrounding the piston and operating one upon the other."

Referring to the drawing of the Daimler motor, it may be noticed that the "casing" of this claim is represented by the cylinder of the Daimler motor; the "reciprocating piston" by the piston U, and the "two cylindrical valves surrounding the piston and operating one upon the other" by A and B.

Claim No. 39 reads as follows: "The combination of an axially-movable cylinder-valve, a piston reciprocating therein, and a sleeve-valve movable on the outside of the cylinder-valve."

The "axially-movable cylinder-valve" of this claim is represented by the inner



SECTION OF KNIGHT MOTOR

sleeve valve B, of the Daimler motor; the "piston reciprocating therein" by U, and the "sleeve-valve" by the outer sleeve A.

Another simple claim is No. 62, as follows: "The combination of a casing and a reciprocating piston therein, a plurality of non-seating annular valves arranged between the piston and the casing, and means for independently moving said valves."

The "casing" is represented in the Daimler motor by its cylinder and the

"reciprocating piston" by U. The "plurality of non-seating annular valves" are represented by the sleeve valves A and B, these sleeve valves being "arranged between the piston and the casing." The "means for independently moving the valves" are represented by the Daimler eccentricshaft and the gearing and small connecting rods.

#### COMPARISON OF CONTROLS

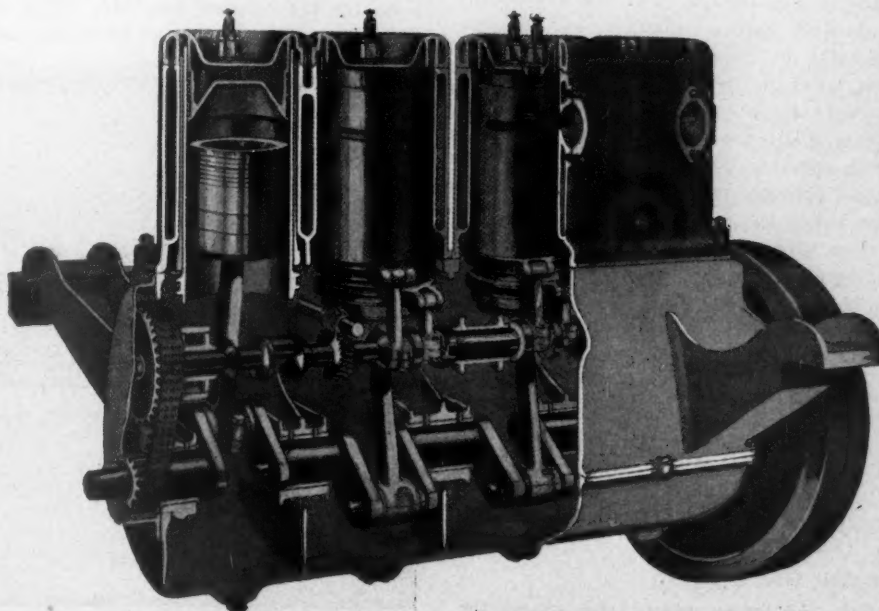
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and throttle. If an accelerator is not used it is impossible to properly control the motor speed when changing gears, because the right hand can only do one thing at a time. If, however, the throttle control is either above or below the wheel at the left, so that it can be controlled by the thumb or first finger, an opportunity is afforded of reducing motor speed to change gears.

#### Uniformity Is Demanded

Whether the standardization of arrangements can be arrived at or not, there is no reason why there could not be some scheme of uniformity in the direction of movement to advance the spark and open the throttle. Motor Age believes the dynamic arrangement will be to move both throttle and spark forward to advance and argues that the amount of movement could be practically the same in all cars, so that there is no possibility of a driver injuring a motor on a strange car because he is not familiar with the movements of the spark and throttle.

There is scarcely a driver who is not familiar with the difficulties of starting a strange car if the owner is not around to give the positions of the spark and throttle levers, and not a few back kicks and broken arms have resulted from too much advance of the spark, when a uniformity of control would have made such a circumstance impossible.



GENERAL VIEW OF KNIGHT-DAIMLER SLEEVE-VALVE MOTOR



GENERAL VIEW OF BELGIAN SHOW

## Belgians Promote Great Show

**B**RUSSELS, Jan. 23—Belgian's ninth annual motor car show, which is being held in the Palais du Cinquantenaire, is the most successful promoted by the Belgian car manufacturers' association. Let it be known, however, that the extraordinarily large attendance is due principally to the aeronautical section, which occupies one-third of the exhibition hall.

This year the show is more national than international than ever before, because the leading French cars are not shown. The agents for the French cars did not care to go to the big expense of exhibiting at this show, inasmuch as the manufacturers of the same cars have secured space at the world's fair which opens in this city towards the end of April. For a while it was thought that the absence of such well known products as Peugeot, Renault, de Dion-Bouton, Panhard, Darracq, Lorraine-Dietrich, Brasier, de la Buire, Bayard-Clement and Delaunay-Belleville would affect the show seriously. Everything seems to indicate, however, that the public does not miss them, and thus those who are in got the best of it.

Even without their leaders France is well represented at the show, its defenders being Sizaire-Naudin, Chenard-Walcker, Berliet, Charron, Rochet-Schneider, Lion-represented last year, has the English Peugeot, Mors, and that new frameless car, Simplicia. England, which was not Daimler and the Austin cars here this year, and Italy has only the Itala to take care of its reputation. Germany is well represented by the Mercedes, the Benz and the N. A. G.

### Mitchell Line Is Shown

Last and by no means least among the foreign element is America, its standard

bearer being the Mitchell. Manufacturers as well as agents and special writers all were rather amazed at the prices at which the different models of this American car were being offered to the public. More than one acquaintance approached the writer and asked him how it were possible for Americans to build such cars and offer them at such low prices.

The exhibit of the Mitchell Motor Car Co. consists of a six-cylinder touring car, a four-cylinder touring car, a four-cylinder runabout and a four-cylinder chassis. Rene Petard, European general agent for the cars seemed well satisfied with his first continental exhibition venture, as it was the first foreign show in which the Mitchell car has been.

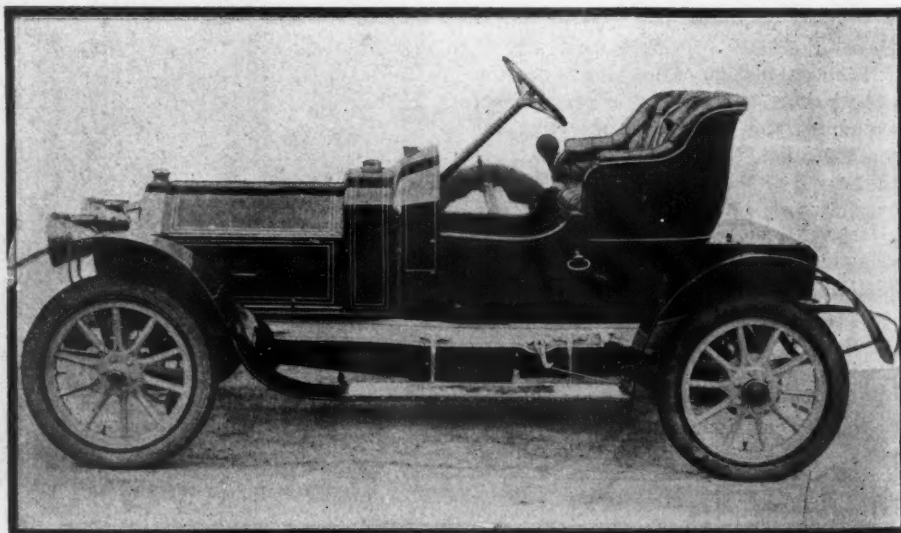
As for the Belgian cars, they never before were shown to better advantage and

made a deeper impression upon the foreign visitors, the special technical writers from the French, German and British car papers. The cars shown this year are the Minerva, F. N., Pipe, Nagant, Germain, Dasse, Metallurgique, Auto-Mixte, Excelsior, FIF, Royal Star, Miesse, Vivinius, Imperia, Springuel, Bovy, Belgica-Saventhem. Several concerns, like the makers of the Minerva and Pipe, occupy two stands with their pleasure cars and also have space in the commercial vehicle section. Minerva, for instance, had ten complete cars, one chassis and one motor—the Silent Knight—in its two stands, while the Pipe had ten complete cars, a chassis and an aviation motor.

### Duplicate of Last Year's Show

The show is a duplicate of last year's as far as the decoration scheme is concerned. In fact it seems to the writer that all the stands, paraphernalia, the posts, the plants, etc., have been kept in storage since last February, and that some varnish and paint was used here and there to make them look again new. This American uniform decoration idea may now be considered as established and again this year the French trade papers speak most favorably of it. So here is at least one thing for which American motor car promoters get credit.

The Belgian cars, without hardly an exception, are prominent because of their fine finish, the care the builders have taken in having the smallest parts as well finished, as nicely polished, as accurately cut or shaped as the big parts. It is evident from a close survey of the many chassis on display that the makers are directing all their efforts to the improvement of the minor parts, in adding more up-to-date features. There is but one instance of a radical novelty, new departure in construction. It is the Germain town car chassis. All the other makers either present chassis similarly constructed as last year's or else cars with motors of more power. Racing cars and freaks are missing.



FOUR-CYLINDER, 8-12-HORSEPOWER F. N. RUNABOUT



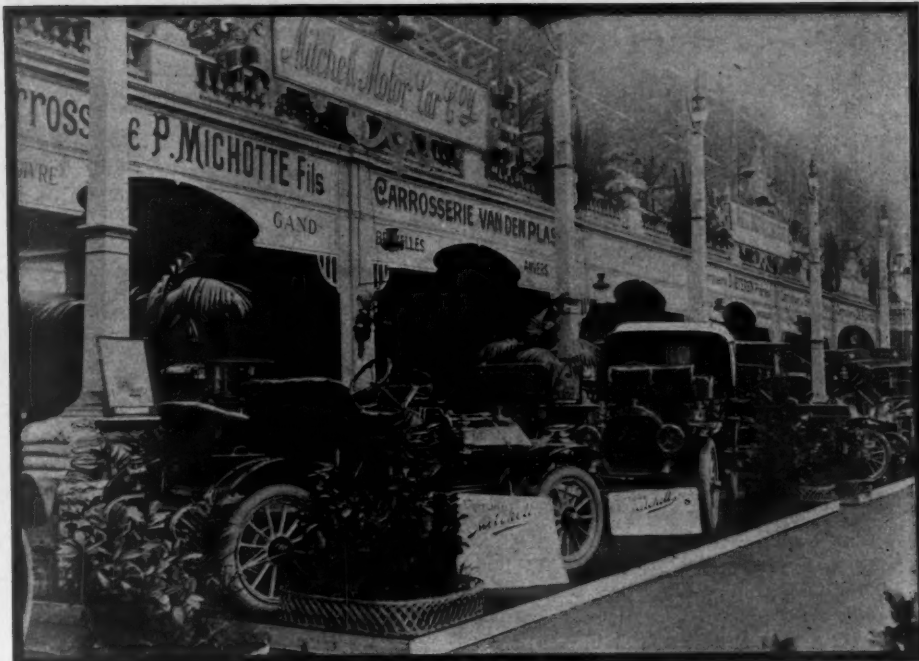
The car which undoubtedly is the feature of the show is the Minerva, with its American motor, the Silent Knight. Last year, for the first time, this valveless motor was shown and attracted a good deal of attention. It was, however, an untried novelty. During the past year a large number of Minerva cars with this motor were sold and their success is almost beyond belief. As a result the 1910 Minerva output already is disposed of, and considering the fact that 600 cars, or rather chassis, are being constructed it is a fact well worth while mentioning, considering this small country. While plenty of native makers only laughed at the American Knight last year and predicted a failure for the Minerva, there are many who would be glad to pay a fortune this year in order to be allowed and fit the Knight to their chassis.

"We have to refuse orders from now on," said a Minerva agent to the Motor Age correspondent. "Premiums of 1,000 francs are offered in order to get cars, but we cannot accept them. The plant in Antwerp will turn out 600 chassis this year—by far the largest output of any Belgian motor car builder—and it is not possible to hope for more. We could sell several hundred more, but it is a question of quality and not quantity with us."

While there is a lack of novelty from the mechanical point of view there is plenty of novelty in the body work. The torpedo body has made its bow here for the first time and met with immediate success, so some agents says. This year the body makers are in larger numbers at the show than a year ago and some have really remarkably finely finished bodies.

#### Zingarra Remarkable Car

A car which attracts general attention is the Zingarra—a six-cylinder 40-horsepower Pipe—specially designed for Baron Pierre de Crawhez for African travels. The car is a small house on wheels. It has room for six persons inside and four outside, including the driver. It may be transformed in turn into a sleeping room, a dining room or



AMERICAN CAR, THE MITCHELL, IN THE BELGIAN SHOW

## Mitchell One of the Exhibitors

a camping car. The fore part is a double phaeton, while the rear part is a big limousine. There are two decks, one of which when put down forms the terrace and the other the ceiling—as shown on photograph. There is a full kitchen service, a linen closet, folding table and stools, and electric-lighting apparatus, an ice box and a dynamo. The table becomes part of the sleeping beds at night. There also is a special water tank holding 45 pints. The car, fully equipped for the road, weighs 5,650 pounds. It has single Jenatzy tires on the front wheels and duals on the rear wheels. When the car is arranged for camping purposes its total length is 315 inches. The wheelbase is 148 inches, or 8 inches more than the regular six-cylinder Pipe.

All told there were at the show sixty-eight fully equipped Belgian cars, twenty-eight French cars, six English cars, four German cars, three American cars and one Italian. There were in addition twenty-nine Belgian, eleven French three English and three German, one American and one Italian chassis. There are fourteen commercial vehicles and four commercial chassis, Saurer making the most imposing display with a 4-ton truck, a 5-ton chassis and a fire engine chassis.

The motor car builders showed aviation motors, namely, the Pipe, Germain and Vivinius.

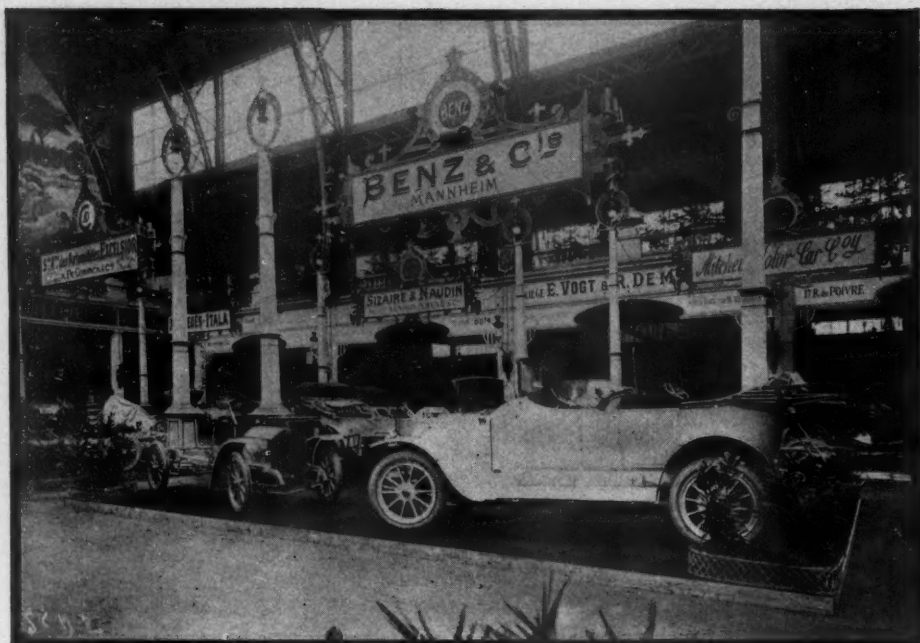
#### Aviation Scores a Hit

There can be no doubt that to a large extent the big success of this year's show is due to the aeronautical section. As one of the organization committee stated to the Motor Age correspondent, there very likely would have been only one-third of the attendance if there had been no airships and aeroplanes. As it is the Belgian dirigible, called La Belgique, which is hung up in the middle of the immense hall, all ready, full of gas, is the attraction for the crowd. The show opens daily at 10, including Sunday, and closes at 5.

Of the Belgian cars the Ateliers Germain make both shaft and chain-drive this year. The sixes are all shaft-driven. This concern brings out a new car known as the Germain 14-16 town car. The four-cylinder motor is cast en bloc, having 3.1-inch bore and 5.1-inch stroke, rated at 25 horsepower, but actually giving 28. The valves are overturned and in two rows above the motor. They are operated by



BARON DE CRAWHEZ' AFRICAN TOURING CAR



BENZ IDEA OF THE TORPEDO TYPE OF BODY

one camshaft. Valves, camshaft, and in fact all the motor parts are enclosed in an air-tight box, partially filled with oil. The camshaft operates two small pumps, one which delivers oil in the bearings and provides lubrication under pressure and the other serving as small air pump which is automatically regulated for pressure feed. There are four speeds. There is a metal segmental clutch. Water-cooling is by means of thermo-syphon. Bosch high-tension ignition is provided and the carbureter is a Zenith.

The four-cylinder Germain cars further include four shaft-driven and two chain-driven models, while the sixes consist of four models. The cylinders are cast separately, the valves being on opposite sides. All have Zenith carbureters and high-tension ignition. All have metal clutches with extensible segments. With the exception of the 70-80 horsepower car all the fours are much alike, differing only

in bore and stroke and wheelbase. The 70-80 is a duplicate of the Germain grand prix racing cars of 1907. The six-cylinder cars are made along the same lines as the fours and differ, of course, as to the motor and wheelbases.

The line of Metallurgique cars for 1910 consists in four shaft-driven models of respectively 12, 16, 26 and 40 horsepower. Each of these models is made in two sizes, the normal and the long wheelbase; the price being the same. The 12 and 16 horsepower cars have their motors cast en bloc, the bore and stroke being respectively 2.95 and 4.3 and 3.3 by 5.1. On the 26 and 40 horsepower cars the motors are cast in pairs, the bore and stroke being respectively 4 by 5.9 and 4.9 by 5.9. On the first three models the inlet and exhaust valves are located on the same side, but on the big car, although the valves are on the same side, the exhaust valves are located above the inlet valves. All have

high-tension ignition, water-cooling, honey-comb radiator and three brakes, two of which are internal and operate on the rear wheels. The clutch is either a metal disk or a metal segmental clutch. The two small cars have three speeds and reverse, while the two other cars have four speeds and reverse. The weight of the chassis for the four models with the short wheelbase is respectively 1,540 pounds, 1,760 pounds, 2,090 pounds and 2,420 pounds. The chassis with a long wheelbase weighs from 110 to 180 pounds more.

Pipe cars are in three models like last year, two fours and a six. All are chain-driven. The cylinders are cast in pairs, with the valves placed at an angle of 45 degrees in the cylinder head. The inlet valves are on the carbureter side and the exhaust valves are on the ignition side. All cars have Bosch high-tension ignition and the Pipe a specially-designed carbureter. The clutch is of the disk type and on the six-cylinder car the disks are alternate, one of steel and one of copper, the first set connected with the motor and the second ones with the transmission. All cars have a three-speed gearset and three brakes.

#### Minerva Uses Knight Motor

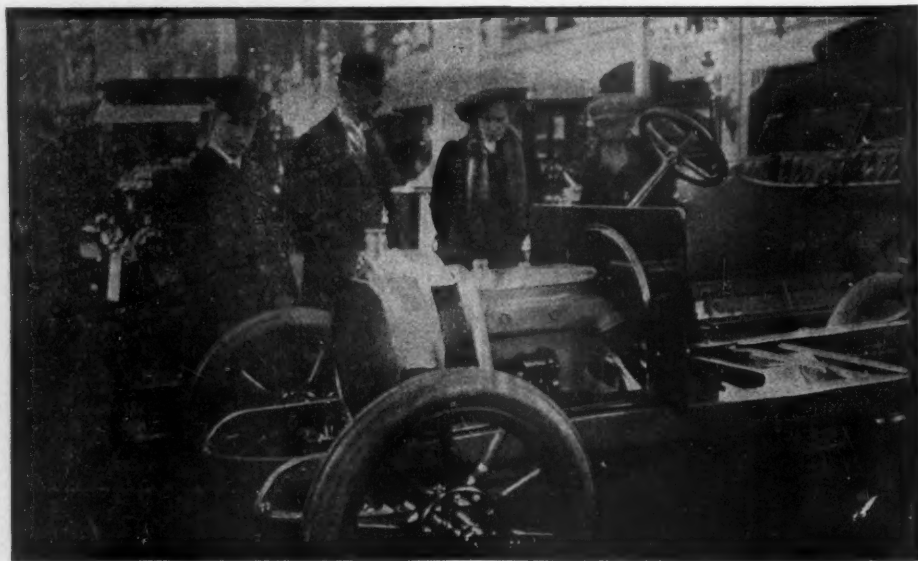
The Minerva Motors, Ltd., has three models this year, a 16, a 26 and a 38-horsepower car. All have the Silent Knight motor, the bore and stroke being 3.2 by 4.3 on the 16, 4.2 by 4.9 on the 26 and 4.9 by 5.1 on the big car. All are shaft-driven and have the Minerva carbureter. All have a leather-faced cone clutch and use Bosch high-tension ignition. There are four speed gearsets on all models. Ball bearings are used throughout.

For 1910 F. N. cars are in three models. The 10-14 has a four-cylinder motor, 2.95 by 3.5, with cylinders cast in pairs, the exhaust and inlet valves being located on the same side, and operated by one camshaft. Water-cooling is by means of thermo-syphon circulation. There is a leather-faced cone clutch and three-speed gearset. The 14-18-horsepower car is constructed on the same lines as the small car, but its water-cooling circulation is through a centrifugal pump. The bore and stroke are respectively 3.4 and 3.5. In the 30-40-horsepower car the bore and stroke are 4.9 and 5.5, the cylinders being cast in pairs. The inlet and exhaust valves are operated by two camshafts. The cooling is by centrifugal pump.

Three Dasse cars are shown, a 16, a 24 and a 40-horsepower. All have shaft-drive, four-cylinders, cast in pairs, high-tension ignition, thermo-syphon circulation, pressure-feed lubrication, sliding gear, three speeds and reverse, the Dasse special automatic carbureter and the axles mounted on specially large ball bearings.

#### Nagant Both Shaft and Chain

The Nagant cars for 1910 are made with either shaft or chain-drive. The former consists of a 14-16-horsepower car and a 20-28, while the chain line consists of a 20-28 and a 35-45-horsepower model. On all the



EXHAUST SIDE OF NEW GERMAIN FOUR-CYLINDER



motors are cast in pairs. On the shaft-driven cars the inlet and exhaust valves are operated through a single camshaft, while on the chain-driven cars there are two interchangeable camshafts. The latter cars have their water circulation through a centrifugal pump, while the shaft-driven cars have the thermo-syphon circulation. There is high-tension ignition on all models, as well as the Hele-Shaw disk clutch. The 14-16-horsepower has a double sliding gear with three speeds and a reverse, while the other models have a triple sliding gear with four speeds and reverse. The big car has four brakes, the others have only three. Ball bearings are used throughout.

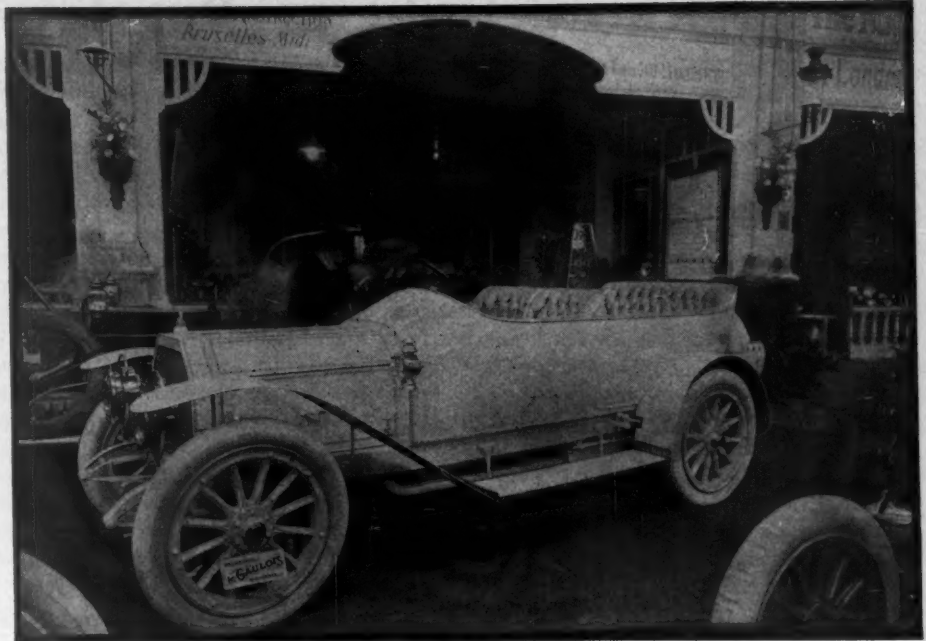
The Springuel has shaft-driven and chain-driven models this year. The 16-20-horsepower is the shaft-driven car, which is made in only one size. The 28-35-horsepower is the chain-driven car, which is made in three chassis sizes, respectively of 113½, 118 and 126 inches, the larger chassis costing \$100 more than the other two. The motor of the 16-20 is cast en bloc, the others cast in pairs. The small car has thermo-syphon water circulation, while the other one has a centrifugal system. Both have an internal automatic lubrication system. The shaft-driven car has three speeds and a reverse, and the chain-driven four speeds and a reverse. Both have three brakes. The small car has a metal disk clutch and the big car a cone clutch. Ball bearings are used on both cars.

The FIF, a Brussels cars, is made in one model, a four-cylinder 10-12-horsepower, the bore being 2.5 and the stroke 4.7. The motor is a monobloc. The crankcase is made of aluminum and in three sections, while the crankshaft is made of steel. The carbureter is automatic. The lubrication is through pressure feed. There are three speeds and a reverse and three brakes.

The three Vivinius models are all shaft-driven. The 10-12-horsepower is a new model made for city purposes. The four cylinders, 2.95 by 4.3, are cast in pairs, as are all the Vivinius motors. The valves are located on the same side. Circulation is thermo-syphon in all three models. All use Bosch high-tension ignition. There is a friction clutch on all models. The axles are made so they may hold a weight of 5,000 pounds per wheel. There are two brakes, one acting upon the differential and the other upon the rear wheels. Each car has three speeds and reverse.

#### Features of the Imperia

The A. G. Piedboeuf Works, of Nessonvaux-lez-Liege, make the Imperia cars, this year placing on the market four models of shaft-driven cars and one chain-driven model. The last named is the big car, the 50-60. It has a four-cylinder motor, 5.9 by 5.5, cast in pairs, centrifugal water circulation, magneto and dry cells for current source, a metal disk clutch, four speeds and ball bearings throughout. The shaft-driven models consist of a 12-horsepower car with a four-cylinder motor, cast en bloc, an 18, a 28, and a 24-30-horsepower, all with four



TORPEDO TYPE OF BODY FITTED TO THE ROCHET-SCHNEIDER

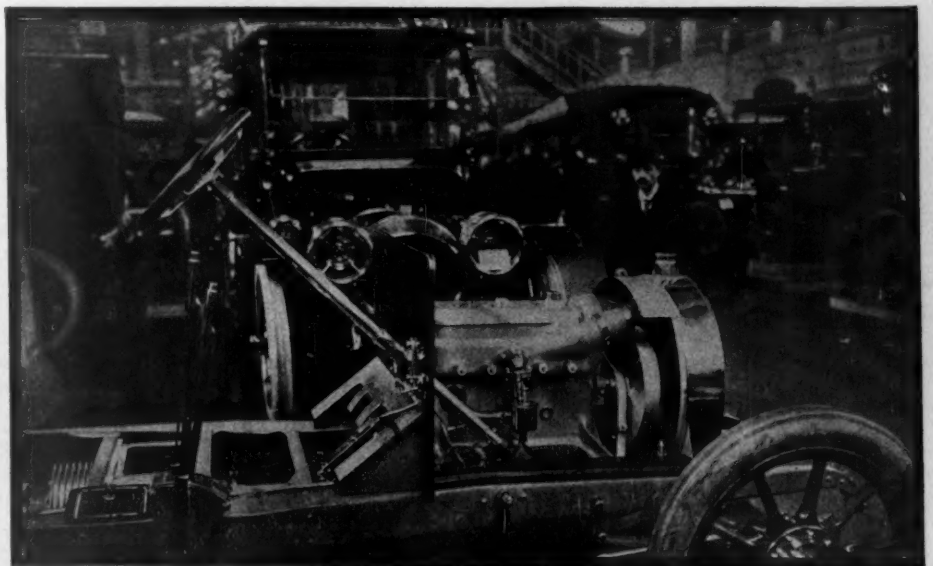
cylinders cast in pairs. The small car has thermo-syphon water circulation and the others have the centrifugal pump system. The first three cars have a single high-tension ignition system, but the 24-30 has magneto and batteries. All have metal disk clutch and ball bearings throughout. The first three have three speeds, while the 24-30 has four speeds.

The Excelsior car is another Brussels product which was brought out for the first time in 1909. The only model made is a four-cylinder 14-20, the motor being cast en bloc. Water circulation is thermo-syphon and high tension ignition is used. The clutch is a leather-faced cone. There are three speeds and a reverse and three brakes. Ball bearings are fitted throughout except in the bushings, which have an anti-friction metal.

The Royal Star company, of Antwerp, brings out the Royal Star and S. A. V. A. cars. The former consist of a four-cylinder

3.9 by 5.1 and a six-cylinder of the same cylinder size, both having the cylinders cast separately. The S. A. V. A. line consists of a monocylinder 3.9 by 4.7, and two four-cylinders monoblocs with 2.5 by 4.3 and 2.95 by 4.7 bore and stroke respectively. The Royal Star cars have a double ignition system, magneto and battery, while all the other cars have the Bosch single high-tension system. All use the mechanical lubrication system, Claudel carbureter and leather-faced cone clutch. The Royal Star has a honeycomb radiator and four speeds and a reverse.

The Miesse cars which are being used mostly as taxicabs, have a four-cylinder motor, cast en bloc, 3.1 by 4.3, with the valves on opposite sides. The water circulation is through a centrifugal pump, the carbureter is a Zenith, the lubrication is through a mechanical oiler, the clutch is a multiple disk, and there is a honeycomb radiator.



INTAKE SIDE NEW FOUR-CYLINDER 3.1 BY 5.1 GERMAIN CHASSIS

## Great Show Held at Portland

PORTLAND, Ore., Jan. 31—In the spacious halls of the Third Regiment armory, at Tenth and Couch streets, Portland's second annual show opened on January 24 under the auspices of the Portland Automobile Club and the Portland Automobile Dealers' Association. For 6 days all that was clever, useful and elegant in the motor world was on display, it being the largest and most complete exhibition of cars and accessories ever gathered under one roof on the Pacific coast. One hundred and twenty-five fully equipped cars, besides half a dozen stripped chasses, were on exhibition by the twenty-eight firms which were able to secure space in the 50,000 feet available.

A great mass of bunting, flowers and evergreen decorations covered the somber girders and columns of the armory, while the floor was covered with green burlap. The lighting was brilliant, there being many electric signs in the various exhibits in addition to the ordinary illumination, which helped materially to show up the cars and the polished chasses and engines. The entire decorative scheme was an outdoor effect, the main hall appearing as a beautiful park or garden. Real trees and palms were used to give this effect.

On the dividing lines between the exhibit spaces were placed ornamental columns 16 feet in height, surmounted by statues of Mercury. Smaller posts at the entrance to each booth held urns of roses, carnations and potted plants. The balcony around the main hall was hidden by strips of canvas representing a wooden bank, and at the top a roadway was seen winding among fir trees and crossing an occasional stream. A large picturesque castle was shaped at one end of the main hall and held the Oregon National Guard band, which furnished the music during the afternoons and evenings.

### Many Dealers Attend

Dealers and motor enthusiasts from Oregon, Washington and Idaho in goodly numbers were in attendance at the show and as a result the cause of motoring was advanced in a great many ways. Over 200 cars were definitely contracted for, and the prospects are too numerous to mention. Between 30,000 and 40,000 paid admissions were collected during the week and the profits from the exhibit will be in excess of \$7,500, which the club will expend on road signs and other road improvements.

Pendleton and Umatilla counties sent a number of representatives to the Portland show, who were authorized to purchase for their friends and neighbors, which they did, and contracted for a number of high-priced cars. There are now over 200 machines in the vicinity of Pendleton, compared to one-fifth that many 4 years ago. While the use of motor cars in this part of the country is not restricted to any

class of people, more and better machines are probably owned by the growers of grain than by any other one class of citizens, was the statement made by one of the visitors, who also stated that nearly every physician in Pendleton was now the owner of a motor car, and the prospects are especially bright for a big sale of cars during the coming season. The motor car is used quite extensively also for conveying fruit and vegetables to market, and in some cases is used to pump the water and grind the feed on the farms. With all indications pointing to bumper crops throughout eastern Oregon, motor catalogs are being scanned and agencies visited with a frequency which denotes that the number of cars is to be greatly increased in this section within the next few months.

### Medford Motor Center

Medford, Ore., located in the Rogue river valley, is one of the greatest motoring towns for its size on the Pacific coast, there now being 250 registered cars for a population of 7,500. In addition to the cars in Medford there are 100 or more in the smaller villages near by. Six garages are now located in Medford, and there is a prospect of a number of new agencies being established this season. The buildings are well-equipped with all modern appliances, as well as complete repair shops. During the Portland show more than fifty cars were contracted for by Medford citizens who visited the exhibits, most of them being of light-weight types. One improvement in the valley which will do much toward the purchasing of new cars, will be the completion this year of the motor highway extending from Medford to Crater Lake and thence to Klamath Falls, to be built jointly by federal, state and county governments, and which will be one of the most scenic motor roads in the world, passing numerous waterfalls, winding through narrow gorges, traversing immense forests and viewing the many natural wonders of Crater Lake National park. It will be possible to make the trip to the lake from Medford in 6 hours.

It is the opinion of the dealers of Baker City, Ore., that the coming season will bring brisk sales of light touring cars and roadsters, and these types represented at the Portland show received considerable attention. Ranchers have been the best buyers up to the present time and many of them are in the market for cars this season. In the country surrounding Haines, Ore., near Baker City, there is quite a sentiment favoring high-wheeled machines or motor buggies, and orders were placed during the past week for ten for early spring delivery. To further encourage motoring a new road from Baker City to Haines is to be built and jointly cared for by the two cities.

During the coming year a quarter-million dollars will be expended on good roads in

Douglas county, due to the tireless efforts of the owners of Roseburg, Ore., and vicinity. Twenty-five cars are now owned in this city, principally by real estate dealers and physicians who find them indispensable in their business. Roseburg has three garages and a number of agents for the standard makes of cars, all of whom are expecting to dispose of a large number of cars during the ensuing year. Roseburg expects to pave forty additional blocks during the coming year, due in part to the motor car.

Motorists of Salem, Ore., were especially interested in the Portland show this year, and a large number attended. There are now five up-to-date garages in that city and dealers are looking forward to a very busy season. Practically all the leading makes of cars are now found there, while 2 years ago there was but a handful of machines being operated.

The exhibit of the Winton Motor Carriage Co. occupied one end of the main floor and the Winton six torpedo roadster, the first car of its kind on the Pacific coast, was shown. Another drawing card was the demonstration given every 10 minutes of the self-cranking device. Thirty Winton sixes were sold for immediate and spring delivery.

The H. L. Keats Automobile Co. had the largest exhibit, there being thirty-five cars in all, including the Chalmers, Peerless, Pope-Hartford and Hudson. They occupied the central space on the main floor and the display was complete in every particular. Almost double the number of sales were recorded over those made in 1909 at the show. The White Motor Car Co., in addition to the steam cars, showed the gasoline make this year. A large table held the trophies won by the White, while directly in the rear huge bouquets of white carnations were placed. Twelve gasoline and steam cars were purchased during the show and several more contracted for. The Covey Motor Car Co. again displayed the Cadillac and Pierce-Arrow, which makes they have carried for the past few years in Portland, and in addition had an exhibit of Cadillac parts. Detroit electrics handled by this firm also were shown.

### Some of the Exhibits

The Crowe Automobile Co. had four different makes on the floor, including the Oldsmobile, Thomas, Marmon and Overland, all of which received due consideration at the hands of the numerous spectators. The Northwest Buick Co. announced a number of new agencies throughout the northwest. Charles M. Menzies handles the Franklin in Portland and brought a number to his exhibit. During the week considerable interest was manifested in the 72-hour non-stop motor made by an 18-horsepower Franklin. E. E. Cohen showed a half-dozen Maxwells, including several of the new models. The Packard, in the hands of Frank C. Riggs, the local manager of that company, scored heavily



at the show and a number of Portlanders chose this car for 1910.

The Metropolitan Motor Car Co. brought out the Pullman and Acme, both of which made a splendid showing and won many new friends. The cups and trophies won by the Pullman occupied a prominent place in the exhibit and proved a drawing card.

Among the accessory dealers were Ballou & Wright, the pioneer dealers in supplies. Their exhibit was very complete and consisted of Indian motor cycles, Morgan & Wright tires, electric systems, tools, etc. The Royce Suspension Hub Co. gave a demonstration of the Royce hub, the invention of Walter G. Royce, a young Portland mechanic.

Two new ideas were also brought out at the show by the H. O. Pick Wheel Co. and the Kenny Steel Auto Tire Co., which had on exhibition a wheel the tire of which was made of steel with the suspension in the rim instead of in the hub.

The O'Gorman-Younie Co., tire and windshield dealer had a most interesting booth. The feature of this exhibit was the demountable rim invented by Mr. Younie.

Other exhibitors were: R. E. Blodgett, Firestone tire; A. J. Winters Co., which exhibited the Elma lighting system; Archer, Coombs & Co., the Rohrbacher automatic pump, which inflates the tire by power from the motor car engine.

The management of the show this year was again in the hands of Will Lipman, secretary of the Portland Automobile Club.

### FORD BUYS STEEL MILLS

Buffalo, N. Y., Feb. 4—The John R. Keim mills, on Kensington avenue, Buffalo, N. Y., have been sold to the Ford Motor Car Co., of Detroit. About 600 men are employed at the mills. The operating force will be increased to 1,000. Additions are likely to be built this year. No motor cars will be built at the plant. The Keim mills have for the last year turned out all of the pressed-steel housing for the rear axles of motor cars and steel drip pans. Various other pressed-steel articles have been turned out in addition to the work for the Ford plant. In the future various parts of the Ford car will be made at the Keim mills. Henry Ford came from Detroit to Buffalo to complete the deal. He was persuaded not to remove the industry from Buffalo. He secured full control for his company and decided on an increase in the capacity of the plant. The plant was owned by the Spaulding estate. John R. Lee, president of the Keim mills, will be president and treasurer of the new company. Norval A. Hawkins, of Detroit, will be vice-president, succeeding S. S. Spaulding. William H. Smith, general manager of the plant, will be the general manager and secretary of the new concern. The directors are Henry Ford, John R. Lee, Norval A. Hawkins and C. H. Willis, of Detroit. The Buffalo plant was incorporated for \$500,000.

## Foreigners Issue Date Budget

**B**RUSSELS, Jan. 31—A glance over the list of events to be according to the European sporting calendar, which was issued yesterday, shows that there remain only two or three really important speed contests on the schedule. Last year the Targa Florio and the Sicilian voiturette race were still on the program, but now they have been forgotten or buried by their promoters and the premier road race of the year 1910 will be the voiturette contest promoted annually by l'Auto, of Paris, unless the Ardennes cup takes place, as the Royal Automobile Club of Belgium, which is promoting it, hopes. The meeting at which the schedule was announced took place in Paris, there being present delegates from the American, British, Swedish, Russian, German and French clubs and from l'Auto and les Sports. Here is the list of the events that have been sanctioned:

### FEBRUARY

13—Kilometer speed trials on ice, promoted by the Automobile Club of Sweden.  
20 to 23—Winter cup and Gothemburg cup contests, promoted by the Automobile Club of Sweden.

### MARCH

3—Hill-climb at Koenigstat, promoted by the Automobile Club of Prague.  
22—Motor events in Monte Carlo.  
27 to April 4—Show at Prague, Austria.  
31 to April 8—Annual wheel and rim trials of l'Auto in France.

### APRIL

2 to 24—Show in Turin, Italy.

### MAY

1 to 4—Small-car show in Munich, Germany.  
1 to 14—Motor car and airship show in Vienna, Austria.  
8—Speed trials in Modena.  
22-29—German-Austrian excursion on the Danube.  
24-25—Speed trials near Vienna.  
26 or 29—Copa Catalunya, near Barcelona, Spain.  
14-15—Speed and hill trials promoted by the Automobile Club of Styria.  
28 to June 9—Show at St. Petersburg.  
Touring car trials of the Automobile Club of Roumania. No date set.

### JUNE

2 to 8—Prince Henry tour, Germany.  
19—Hill-climb and motor boat races, promoted by the Automobile Club of Sweden.  
20—Voiturette race of l'Auto, France.  
21—Commercial car trials of l'Auto, in France.  
26—Val-Suzon hill-climb, France.  
26 to 29—Excursion in the Austrian Alps, promoted by the Austrian Automobile Club.  
22 to 25—Touring car tour and industrial vehicle trials, promoted by l'Auto and the Automobile Club of St. Petersburg.  
27—Speed trials in Kiew, Russia.

### JULY

2—Kilometer trials in Moscow, Russia.  
10-12—Touring car trials in Germany.  
12 to 18—Week of Ostende, Belgium.  
20 to 25—Meeting of Boulogne, France.

### AUGUST

1 to 15—Circuit des Ardennes meeting, Belgium.  
15 to September 15—Industrial vehicle trials in France.  
21—Speed trials of Salon, France.  
28—Mount Ventoux hill-climb.  
29 and 31—Hill-climb and speed trials at Guipuzcoa, Spain.  
August-September—Touring car trials in Thuringen, Germany.

### SEPTEMBER

3 to 6—De Liedekerke and Ostende cup races, Ostende, Belgium.  
8 to 25—Motor car reliability trials, promoted by l'Auto, in France.  
18—Semmering hill-climb, Austria.

### OCTOBER

2—Gaillon hill-climb, France.  
Grand prix of the Automobile Club of America.

In about 2 months the committee will issue a new and revised list of events and

it is likely a few more will be added. It also was rumored that there will be some kind of a race in Italy and that the Florio cup race may be held in some other part of the country.

Of interest to America is the fact that on the budget there is named the grand prize race of the Automobile Club of America, which is taken to mean that that classic will be renewed, whether or not the event will receive any support from makers on this side, but it is thought some may.

### REVISING THE BLUEBOOK

Chicago, Feb. 5—The Automobile Blue Book Publishing Co., which is hard at work on its 1910 editions, reports satisfactory progress in all branches of its work. During the driving season of 1909 the company had three and frequently four crews of two men each covering the roads embraced in the several sections they publish. Robert Bruce and John F. Mixer, traveling in New Jersey, New York, Pennsylvania, Delaware, Maryland, the District of Columbia and Canada, revised several thousand miles of old routes and added approximately 10,000 miles of new route matter—Canada, west and northwest of Montreal, having about 2,500 miles. E. R. Mixer and Henry MacNair devoted their time and energies to the New England states and Canada, east of Montreal, revising many of the old and connecting them with new routes and compiling text for about 11,000 miles never before routed, covering Maine as thoroughly as Massachusetts, something heretofore not done. John P. Dods and Fred E. Lee have spent their time in the western territory adding many connecting routes in Ohio, Indiana, Michigan, Illinois, Wisconsin and Iowa, and have invaded Minnesota, Nebraska, Kansas, Missouri and Kentucky. They have run three routes to St. Paul and Minneapolis from Illinois and Iowa points, two trunk lines across Iowa, with many connecting links. A new route from Sioux City via Omaha, Lincoln and Kansas points to Kansas City and a route from the latter city to St. Louis—a route never before published—securing about 10,000 miles additional mileage.

N. H. Van Sicklen, Sr., president of the company, and E. R. Mixer made the New York-Atlanta-Savannah and return trip, which will, with other matter since secured, give a direct route from all northwestern points to the south as far as Jacksonville, Florida, adding over 3,000 miles of new matter in a territory heretofore practically unknown to tourists. A new style text, more easily followed, has been adopted, new and explicit maps are being prepared and an entirely new system of indexing will be used, rendering the information contained in the various routes more easily located. All sections will be ready for delivery April 15.



RELIABILITY RUN CONTESTANTS REMOVING A FENCE



ROCHESTER-SYRACUSE PACEMAKER IN THE DITCH

## Grand Forks Holds First Show

GRAND FORKS, N. D., Feb. 7—Dealers and the motoring public in general are more than pleased at the success of the first annual show which closed Saturday night. The show was held February 1 to 5, during the annual conventions of the Implement Dealers' Association of the Northwest and the city was crowded to overflowing with visitors. The show attendance during the 5 days' exhibition exceeded 6,000. As might be expected, the business done by the exhibitors was more than satisfactory and a high ratio of sales in proportion to the attendance was achieved. Many of the local and state agents closed out the remainder of their allotment to sub-agents while the number of individual sales reported was astonishing. The entire main floor was taken up with twenty-eight cars of various models on display, representing twenty-three makers.

The experience of all the dealers exhibiting shows that in the northwest, at least, the coming season will see all sales records broken. Many farmers who never have owned cars are now frankly in the market,

while there are easily as many more who are in the market for new cars.

The higher priced cars were represented by the Stearns, shown by the Dakota Auto Co., the Grand Forks branch of the Beek Auto Co., of Lakota; the Winton, handled by John S. Johnson, of Minneapolis, and the Rambler, sold by the P. J. Downes Co., also of Minneapolis. From these the price ranged down to the Brush. This year's moderate-priced cars, including many features heretofore found in more expensive makes, seemed to have the center of the stage so far as public interest was concerned. Early in the week the Beek Auto Co., through its Grand Forks branch, announced that no more sub-agency contracts for Reo cars could be made, as that portion of the allotment of 400 cars for the state had been disposed of. The cars displayed were: Overland, Franklin, Hupmobile, Maxwell, Reo, Velie, E-M-F, Stearns, Winton, Wescott, Imperial, Jackson, Brush, Buick, Oldsmobile, Regal, Mason, Mitchell, Kisselkar, Rambler, Halladay, Ford, Interstate.

## Remarkable Results In Rochester Reliability Run

Rochester, N. Y., Feb. 4—Starting Wednesday, on as beautiful and balmy a day as ever May brought forth and finishing last night in the teeth of a biting and blinding snow blizzard twenty cars brought to almost a sensational close the second annual winter endurance run of the Automobile Club of Rochester. Sensational because out of the twenty starters, fifteen finished with absolutely perfect scores and because of the five penalties, four were because of stalled motors and one for a broken spark plug. Under the conditions which obtained this seems almost incredible.

While the total mileage traveled in the 2 days only was in round numbers 200, the double century presented to the contestants more arduous grief and toil and abuse than three times the number of miles under touring condition of the same roads. Time after time, car after car slewed into uncertain snow banks and buried itself with almost its full weight on one or two wheels into the gutters or into ruts so deep that extrication without outside help seemed impossible. But with it all every car came through without one single mechanical mishap.

The morning run of Wednesday to Clyde, where dinner was served, was easy and most enjoyable. But by the time 5 miles had been reeled off after dinner everybody awoke to the fact that the run was just starting. All afternoon snow in varying depths from 6 inches to almost as many feet in some drifts was encountered. About 7 miles out a stretch of road wholly impassable was encountered and a trip over wheat fields was necessary. Fences were cut down and the ditches cleared of snow and filled with fence rails so that the cars could get to the field. Then midway across another ditch was encountered and out of this the snow was cleared and fence rails were again hauled in sufficient numbers to allow the cars to cross. With more than thirty men armed with axes and shovels it required more than an hour to get through this stretch of about a mile of road.

Three times during the afternoon it was necessary for ten to fifteen men with shovels to clear the way for many rods that the pacemaker might get through and the long steep and winding hills offered problems to test the nerve, skill and daring of every driver. But Cammillius was finally reached and with some twenty cars of the Automobile Club of Syracuse as an escort the rest of the run into Syracuse was made.

At the end of the first day all were perfect except a Ford T driven by Claud Darling, which suffered a broken spark plug; and the Gaeth, with D. C. Anderson driving, which had a stalled motor.

When the start home via Geneva was made on Thursday wet snow, almost rain.



## Denver Motor Club Sets Dates for Annual Show

Denver, Colo., Feb. 3—The Denver Motor Club will hold its second annual show in the Auditorium on February 23, 24, 25 and 26. The board of governors has appointed the following on the show committee: C. P. Allen, chairman; Dr. Edward F. Dean, and William D. Nash. G. L. Wands is manager of the show. The Auditorium already has been leased and three-fourths of the space disposed of. The show will be opened to the public on Wednesday, February 23, at 2 p. m., and on the other 3 days thereafter at 10 a. m., and will close each evening at 10:30 p. m.

was falling fast. Within an hour it had turned to snow and with the wind increasing the thermometer kept falling until by 11 o'clock conditions were such that nearly everybody was suffering keenly. Those who were in cars without tops had to tie up their faces and finally the drivers of many of them bought veils. Goggles were useless, as the snow filled them in just a moment. Notwithstanding this fairly good time was made into Geneva, although delays of nearly an hour were caused by the digging out of banks of snow on the hills.

After dinner at Geneva the thermometer dropped still farther and while the snow lessened somewhat in its fall it was of the sharp biting sort that cut and wounded wherever it struck. The run was made in good time from Geneva and although street cars and interurbans were stalled and way late the pacemaker reached Cobb's Hill, Rochester, on time to maintain a schedule of approximately 17 miles an hour.

The pacemaker car, a Palmer-Singer Six-Sixty, was driven throughout the run by Bert Van Tuyle, secretary of the Automobile Club of Rochester.

Thomas J. Northway, one of the officers of the Rochester trade association and a prominent dealer, drove an Oldsmobile four-cylinder car for the press. Besides representatives of Motor Age and the Automobile there were in the car Walter A. Stewart of the Rochester Times and E. R. Partridge of the Rochester Herald. The summary:

Car and driver	H.P.	Car model	Score
Chalmers, J. W. Ellis.....	40	1910	1000
Cadillac, Ed. Martin.....	30	1910	1000
Ford, Fred Rockelman.....	20	T	1000
Selden, Jack Harrigan.....	36	1910	1000
E-M-F, F. W. Peck.....	30	1910	1000
Franklin six, John Burns.....	43	1910	1000
Cunningham, W. Kelman.....	30	1910	1000
Cunningham, John Holton.....	30	1910	1000
Maxwell, George Bower.....	30	K	1000
Pullman touring, Ray Hollis.....	40	1910	1000
Chalmers-Detroit, Jack Ward.....	30	1910	1000
Oakland, Dick Geyer.....	40	1910	1000
Chalmers-Detroit, H. A. Strickland.....	30	1910	1000
Speedwell, William Holtzmler.....	40	1910	1000
Selden, Hector Carmella.....	36	1910	1000
Cadillac, Ray Bettys.....	30	1910	*999
Ford, Claud Darling.....	T		†990
Selden, W. C. Barry, Jr.....	36	1910	*999
Gaeth, D. C. Anderson.....	40	1910	*999
Maxwell, Harry Veltz.....	12	A	*999

\* Stalled motor

† Motor stops, 5; change plugs, 5



ROCHESTERIANS LINED UP BACK OF THE PACEMAKER



ROCHESTER-SYRACUSE RUN—DIGGING OUT A SNOW DRIFT

## Details of the Minneapolis Show

MINNEAPOLIS, Minn., Feb. 3—Indications are that the third annual show to be given under the auspices of the Minneapolis Automobile Show Association, February 19 to 26, inclusive, will be a big event. Already the list of exhibitors for this show exceeds that of 1909 by at least 80 per cent. The space on the main floor of the big armory has all been taken up and on this floor alone upwards of seventy dealers will show their lines, and it is estimated that 1910 models of more than 100 different makes of cars will be exhibited. There is besides this floor a spacious basement, which will be used for the exhibition of the heavier class of motor vehicles, such as motor trucks, delivery cars, etc. The space here, too, is being taken up rapidly. The balcony will be used for the exhibition of accessories, and not only are the local dealers coming in but foreign firms in large numbers are interesting themselves and will take space.

Manager Walter R. Wilmot is sparing no expense to make the entertainment features of the show equal to like entertain-

ment at any of the larger shows in the country. Some of the best vaudeville acts in the country have been secured for the week, there will be band concerts, music by local artists and other special features in addition to the regular bill of vaudeville acts.

The officers of the Minneapolis Automobile Show Association who have the affair in charge are: H. E. Pence, of the Pence Auto Co., president; H. E. Wilcox, of the Wilcox Motor Co., vice-president; F. E. Murphy, of the Minneapolis Tribune, secretary, and Walter R. Wilmot, manager.

### BUFFALO CHAUFFEURS CLUB

Buffalo, N. Y., Feb. 7—The Professional Chauffeurs' Club, with about seventy-five members, has been organized in Buffalo. The members will have rooms fitted up with a library, baths, pool, billiard and other accommodations. To become a member of the club the applicant must pass examination and qualify as an expert driver before a board of examiners with respect to character and ability.

## Massachusetts Legislation Is Quiet

BOSTON, Feb. 5.—Motorists will not have occasion to make many trips to the state house during the present session of the Massachusetts legislature, for there is very little important motor legislation in sight. Of the fourteen bills introduced for the consideration of lawmakers six of them relate to the carrying of lights at night by all vehicles. This is the old light bill—for practically all of them are identical in their general terms—that the motorists have tried to get the legislature to enact the past few years. But many members of the general court come from districts where farmers predominate and they have opposed such a measure with success each year. It is very likely to be the same story this year. Last year some of the members of the legislature were in favor of the bill, but they thought there was enough motor legislation in sight without trying to tackle the light bill. What the outcome will be this year is problematical. No date has been set for the hearings, but they probably can all be taken care of at one session.

It is pretty well recognized now that all vehicles should have some sort of a light as a preventative of accidents. Many of the objectors to such legislation have changed their minds, and there is a notable increase in the number of horse-drawn vehicles that have a light underneath when on the roads at night.

Laurence J. Dugan has presented a bill that would allow a man who bought a car and wanted to use it right away a chance to do so until he had received his registration from the highway commission. The bill asks that a person buying a car may use the dealer's registration for a period not exceeding 10 days. It is a reasonable request.

Clement R. Lamson has a bill that is of interest to those who operate motor buses carrying ten or more passengers. It seeks to prevent the use of such vehicles until a bond has been deposited with the highway commission representing \$5,000 for each passenger the bus can carry so as to provide security for damages in case passengers are injured. It also provides that a tax of \$10 for every 100 pounds exceeding 4,500 that the vehicle weighs. There also is another section about brakes and tires. This was naturally opposed not alone by the owners of such vehicles but by the representatives of the commercial vehicles throughout the state.

Isaac E. Willetts has a bill that seeks to change the wording of the law relative to non-residents so that the 10 days allowed them in this state shall mean 10 days in any one year. Samuel H. Mildram has presented a bill to authorize the granting of licenses to minors when the highway commission is unanimous in approving them. The present law puts the age limit at 16, but under the bill just put in, the

highway commission, if it were unanimous, could issue a license to anyone under that age. Royal Robbins has a bill designed to check noise. It provides that no person operating a motor car inside the thickly settled portion of a city or town shall sound any horn or other device for signalling other than a bell or horn operated by hand. It also provides that no operator shall have the muffler cut out and that he shall not make any unreasonable noise. Another section provides that no one shall permit smoke to escape from his motor car.

There are a few bills relative to highways that interest owners of cars. One of these petitions for the laying out of the old Newburyport turnpike from Sullivan square to the Newburyport line. John W. Haigis has presented a bill that will allow a portion of the fees collected for motor car fines and registration to be diverted to the use of the little towns if it appears that motor vehicles damage the roads so that it adds an additional expense to the towns. It seems reasonable.

Another bill worthy of attention provides for the construction of a special motor road from Boston to New York. It asks for permission to lay out a section from the Newton-Brookline line to the Rhode Island line. The corporation asks for a charter that will allow it to maintain the road as a turnpike with toll gates, the road to be 150 feet or under in width. It is proposed to capitalize the corporation at \$2,500,000. The petition has been put in by Fred C. Hinds.

### WOULD REGULATE TAXICABS

Washington, D. C., Feb. 5.—A bill regulating the use of taxicabs in the District of Columbia has been introduced in congress by Representative Coudrey. It provides in effect that every person driving a licensed taxicab shall be licensed as such driver, and every application for such license must be indorsed in writing by two reputable citizens, testifying to the competence of the applicant. No owner of a taxicab shall employ an unlicensed driver under a penalty of \$10 for each offense. Every taxicab must be licensed, the annual fee being \$10 for each special taxicab and the same amount for each public taxicab. Each driver must pay an annual license fee of \$2. The bill provides that inspectors shall be appointed whose duty it will be to test, inspect and ascertain the accuracy of each taximeter, and to measure, test and examine every wheel, tire, gear, shaft and every part of the mechanism of every taxicab which may affect or control the operation of the taximeter. The inspectors must mark and number each taximeter and vehicle which is approved by them at least once every 6 months, and as much oftener as the chief of the license office may deem necessary,

with some suitable device. A fine of \$10 is provided for violations of the provision regarding the use of unsealed taximeters. The rates of fare provided by the measure are: For each two persons,  $\frac{1}{2}$  mile or any part thereof, 30 cents; for each additional  $\frac{1}{4}$  mile or any part thereof, 10 cents; for waiting time, at the rate of \$1 per hour; for each four persons, for  $\frac{1}{2}$  mile or any part thereof, 40 cents; for each additional  $\frac{1}{4}$  mile or fraction, 10 cents; for waiting time, at the rate of \$1.50 per hour; for one piece of baggage, 20 cents. No charge shall be made for hand bags, dress suit cases, or child under 5 years of age. Various other provisions, some of them of a drastic nature, are contained in the bill.

### EXPORTS AND IMPORTS

Washington, D. C., Feb. 7.—Reports given out by the government show that the exports for the 12 months for 1909 ending December 31, show an aggregate gain of \$2,838,023 over 1908. There were 3,386 cars exported in 1909 and 2,164 in 1908, the gain in car values amounting to \$2,542,738. The value of parts exported show an increase of \$295,285. It is noted that the greatest actual gain is by British North America, which has increased its importations 110 per cent, the figures showing \$2,437,042, as against \$1,115,540 in 1908. Africa has taken \$69,181 worth of cars in 1909 as against \$14,993 in 1908, a gain of almost 5 per cent. Figures for the last 3 years show that in 1909 the American exports of cars and parts reached \$7,786,617, in 1908 \$4,948,594, and in 1907 \$5,756,972.

The increasing importance of the export trade in motor cars and parts is indicated in the latest returns of the bureau of statistics. The number of cars exported in December was 458, valued at \$503,431, together with parts valued at \$96,604, as against 159 cars, valued at \$229,817, and parts valued at \$34,354, exported during the same month of 1908. The year's exports of cars numbered 3,686 machines, valued at \$6,889,031, while parts to the value of \$897,586 were also shipped abroad during the year. This is a tremendous gain over the exports of 1908, which amounted to 2,164 cars, valued at \$4,346,293, together with parts valued at \$602,301. These figures show very clearly that American cars have reached a point in their development that commend them very strongly to foreign nations, and it is also evident that many makers are making a close study of the export situation.

America's foreign customers for cars and parts during the year were as follows: United Kingdom, \$2,059,206; France, \$846,136; Germany, \$181,087; Italy, \$224,068; other European countries, \$335,675; British North America, \$2,437,042; Mexico, \$494,238; West Indies and Bermuda, \$337,414; South America, \$240,453; British East Indies, \$18,283; British Australasia, \$303,452; other Asia and Oceania, \$191,448;



Africa, \$69,181; other countries, \$48,934.

The import trade in motor cars and parts also continues strong, though it is not making the great gains noted in the export trade. During December last 149 cars, valued at \$292,545, and parts valued at \$62,811, were imported into this country, as against 126 cars, valued at \$215,173, and parts valued at \$69,762 imported in December, 1908. The number of cars imported during the year was 1,645, valued at \$3,071,002, together with parts valued at \$865,506, while the number of cars imported in 1908 was 1,347, valued at \$2,558,819. The value of the parts imported during that year was \$650,563. Cars were received from the following countries last year: United Kingdom, 101, valued at \$233,383; France, 928, valued at \$1,670,900; Germany, 127, valued at \$321,033; Italy, 418, valued at \$689,454; other countries, 71, valued at \$156,232.

### BIG COAST TOUR BOOKED

San Francisco, Cal., Feb. 3.—One of the big motor events of the coming season on the Pacific coast will be the tour from San Francisco to Portland, Ore., which will be managed by the Portland Automobile Club. The event is to be known as the Lombard tour, and promises to become in the west what the Glidden tour is in the east. The tour will take its name from its founder, Gay Lombard, a well-known Portland business man. The cup which will be awarded to the winner has been donated by Mr. Lombard, and has a value of \$1,000. He has placed this trophy in the hands of the Portland Automobile Club.

### NEW LAMP DESIGNS

(Continued from Page 45.)

lights, and with the lens mirror and other types of acetylene lamps, and the company reports the electric the more satisfactory. **Acetylene Gas Generators**

Nothing new is shown in the line of acetylene gas generators, as most of these have been brought to a very satisfactory state. Quite a number of the makers, however, show small generators for motor cycles which are exact reproductions of their regular models. Several types of direct-current electric generators both of the magneto and dynamo type have been on the market for some time, supplying current for both lighting and ignition purposes. A rather interesting exhibit is that of the Apple Electric Co., which shows how its system is arranged and operated at variable speeds without in any way affecting the lights. The Apple dynamo is of a variable-speed type electrically regulated, but there are a number of constant speed dynamos in operation which are regulated by some form of centrifugal governor. The increasing popularity of electric lighting will cause renewed attention to be given this end of the system, and a high state of efficiency is bound to follow.

## Philadelphia Club to Build Home

PHILADELPHIA, Pa., Feb. 6.—Since reaching the 1,000-mark in membership the Automobile Club of Philadelphia has decided to proceed in earnest to carry out its long-considered plan of erecting an up-to-date clubhouse and garage. At the March meeting the committee in charge of the matter will in all probability be prepared to announce which of the centrally located sites on which options have been secured will be selected. The plot of ground will be at least 25,000 square feet in dimensions, and upon it will be built the five-story concrete-and-steel fireproof clubhouse and garage. To finance the project the club will issue \$300,000 of 5 per cent income and equipment bonds—of \$500 denomination each—redeemable at par and interest April 1, 1915, or on any of the semi-annual interest periods thereafter on 30 days' notice. But \$200,000 of the authorized amount will be issued at first and at 97½ they will yield about 5.20 per cent. These bonds will be secured by a second mortgage on the real estate to be acquired by the club, valued approximately at \$200,000, and the building, valued at the same figure, subject to first mortgage of \$200,000. All income after operating expenses and fixed charges are met will be applied to paying interest on the bonds, the balance going into the sinking fund to be used for the redemption of bonds.

The committee has been at work for nearly 2 years, and in that time has made a thorough study of the garage situation in the center of the city. It has been demonstrated that the demand for garage facilities is far in excess of the supply there, and on the basis of 300 cars—which the committee has adopted as the minimum capacity of the club garage—it has been figured out that the annual income from storage—at \$20 per month per car—and profit on accessories, fuel, oils and repairs will be about \$94,500 and the expenses \$40,848. Of this annual balance of \$53,652, \$19,000 will be devoted to paying interest on first mortgage and bonds, and allowing \$9,652 for unforeseen contingencies would leave a balance of \$25,000 to be placed in the sinking fund for the redemption of the bonds. Experts have figured it out that these estimates, if they err at all, do so on the side of conservatism.

As a means of attracting and holding members the garage will be a sure winner. Besides the moderate storage charges and the reduced club rates for supplies, accessories and repairs, the garage will offer every accommodation in the matter of equipment—safe storage, rapid delivery and accurate accounting of fuel and oil supplies; vacuum cleaner system for upholstery and car-body interiors; compressed air supply all over the building; constant inspection of cars; a chauffeurs' bureau; daily report system of car move-

ments; a machine shop equipped with every necessary tool, with an auxiliary shop where members' chauffeurs may do repair work on owners' cars, etc.

The club-house plans provide for billiard and card rooms, lunch, reading and directors' rooms, library and bath rooms—with plunge—lockers, women's rooms, map room, and other conveniences of a first-class metropolitan club.

This activity in the building line will not be allowed to interfere with the club's sign-boarding, map, road-book and good roads work, plans for which for the coming year are already well under way, and await only the advent of real spring weather to proceed with vigor.

### FRENCH INDUSTRY SUFFERS

Paris, Jan. 27.—The motor industry of France just now is going through a crisis of an unexpected nature. The continual rain and snow during the last 10 days caused the greatest inundation, the biggest overflow in many parts of France that this country has experienced in centuries. Paris and its surrounding country is especially affected through the overflowing of the Seine river. It is a catastrophe which will result in millions and millions of dollars of loss, and which has dealt a hard blow to a large number of the biggest motor car manufacturers in France. At the present time it is estimated that from 12,000 to 18,000 men employed exclusively in motor car, motor car parts and motor boat and aeronautical manufacturing establishments are out of work.

Several days ago the 4,000 workmen employed by Renault in Billancourt were told to go home, and even if the manager had not wanted to stop the engines, the overflowing waters from the Seine would have done so within less than another day. In Puteaux, where the Darracq, Vinot-Deguignat, de Dion-Bouton, Saurer, George Richard plants are located, the water already is so deep that men go about in the streets into the plants in canoes and other kinds of small boats. In Levallois Perret the Clement-Bayard plant is partly in water. In parts of the plant some men still work, this being possible to the fact that three large pumps are constantly in operation to draw out the water.

In Ivry the plant of Brasier is like a capsized boat in the lake. In some plants, like at the Bosch ignition shops, although there are from 75 to 100 inches of water in places, all work had not to be abandoned. At the Panhard plant work is going on normally, but, on the other hand, all work had to be stopped at the plants of Mors, Aleyon, Gobron-Brillie, Aries, not to speak of scores of manufacturers of parts and accessories. All the valuable machinery, power plants and heating plants are submerged and some experts say they cannot be used again.

## Tame Carnival at New Orleans

NEW ORLEANS, La., Feb. 6.—One record was broken and there was one slight accident at the carnival track meet. Nothing else was particularly notable at the races, though the events were interesting and the weather and attendance good, despite the fact that today the races had to compete in public interest with the flights of Paulhan in his aeroplane, the first aviator to appear in the south.

Barney Oldfield, driving his 120-horse-power Benz, in a match race with Ben Kirscher, established a new 5-mile competition record. The former mark was 4:35, which was lowered to 4:33½. Both records are Oldfield's, the first one having been set at Los Angeles.

Lynch, driving a Jackson car in the 25-mile stock car race, the New Orleans sweepstakes, crashed into the fence in the fourteenth lap. Lynch and the mechanic were shot out of the car, but were uninjured save for scratches. The right front wheel of the machine was smashed. The accident was due to the breaking of a steering knuckle in the three-quarters turn.

What promised to be the most exciting contest of the meet was the 10-mile match between Oldfield in the Benz and Ralph de Palma in a Fiat. This race was not on the program but was arranged between the drivers, who are said to be at loggerheads. The race was placed second in Sunday's card. It promised to be a pretty duel. Oldfield got the lead at the first turn, but held it only a quarter of a mile, when de Palma passed him. Oldfield got the lead again before the end of the first mile. In the third lap de Palma, with a wonderful burst of speed, passed Oldfield again. Two hundred feet further his tire burst and he withdrew. The second mile was clocked in :55.

Oldfield won four firsts; de Palma won two events. Kirscher was the only other professional driver to figure in the returns. The entry list was small.

Experts remarked that the track was not in as good condition as at the 1909 meet. It was cuppy and there was some dust. This is due, it is believed, to the fact that the oil was not put on the surface soon enough. The public, however, was satisfied with the sport offered. Crowds filled the grand stand and lined the rail and several hundred touring cars and runabouts were parked along the track, filled with spectators.

George Robertson never faced the starter. He broke the crankshaft of his Simplex car Saturday morning while doing a trial mile and was not able to get the machine into shape.

H. F. Fulton with a Packard, Leigh Lynch in a Jackson, Fritsch in a Buick and Delaney in a Jackson entered the 25-mile race for cars with stock chassis which was the first event of Saturday. Fulton led at the start, with Lynch crowding him

hard. Fritsch kept a good pace, as did Delaney for a few miles. Delaney fell back, Lynch passed Fulton, and they finished Lynch, Fulton, Fritsch, in the order named.

Oldfield, de Palma and Kirscher entered the 5-mile free-for-all. Oldfield dropped out at the first three-quarter pole, because of transmission trouble. De Palma won, with Kirscher close behind. De Palma drove the Fiat, Kirscher the Darracq. The time for this race was 4:41.

C. S. Bragg won the third race. He drove a Fiat, S. L. Speer a Jackson, Fritsch a Buick, M. P. Irwin a Thomas and George Clark a Jackson. This was a 10-mile amateur event. Clark withdrew when he was faced with the charge of being a professional. David Besuden protested that Bragg's car is a racer and not a stock car. Ginder Abbott, referee, received the protest. Bragg won. Speer and Clark withdrew, Irwin lasted but a short distance, and only Bragg and Fritsch remained. Fritsch was ½ mile behind at the finish. Besuden refused to start.

Oldfield in a Knox, de Palma with his Fiat and Kirscher in the Darracq fought out the 10-mile handicap, free-for-all. Oldfield was given 35 seconds over de Palma and Kirscher 10 seconds over the Italian. Oldfield held the lead for 8 miles, when de Palma overtook him and won in 9:24.

It was in the 5-mile match with Kirscher that Oldfield set the new record, and also drove the fastest mile of the day, 53 seconds flat. Oldfield, too, won the New Orleans sweepstakes, Delaney and Lynch being put out. Fritsch finished, but was lapped and then beaten ¼ mile.

Sunday afternoon the first race was a 5-mile amateur event for stock chassis for the Klaw & Erlanger trophy. Fred Shaw, driving the same Knox used by Oldfield in the professional races, won; C. S. Bragg in de Palma's Fiat was second; Jack Darcy in the Stoddard-Dayton, third. The Packard car went out at the first turn.

The 10-mile match between Oldfield and de Palma followed, then was scheduled the 5-mile New Orleans championship, which M. P. Irwin in a Thomas won.

In a 10-mile special handicap event Oldfield in the Knox won from de Palma in a Fiat. He had 28 seconds handicap. Summaries:

### SATURDAY

Twenty-mile stock chassis for cars of 301 to 450 cubic inches piston displacement—Lynch, Jackson, won; Fulton, Packard, second; Fritsch, Buick, third. Time, 21:44.  
Five-mile free-for-all—De Palma, Fiat, won; Kirscher, Darracq, second. Time, 4:41.  
Ten-mile amateur championship—C. S. Bragg, Fiat, won; Fritsch, Buick, second. Time, 10:36. Protested.  
Ten-mile handicap, free-for-all—De Palma, Fiat, won. Time, 9:24.  
Five-mile match race—Oldfield, Benz, won. Time, 4:33 4-5.  
New Orleans sweepstakes, 25 miles—Oldfield, Knox, won; Fulton, Buick, second. Time, 26:43.

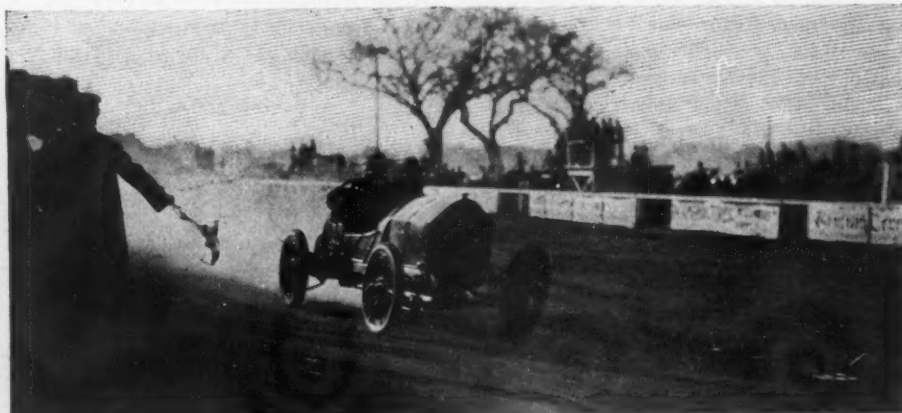
### SUNDAY

Five-mile, Klaw and Erlanger trophy, for amateurs in stock chassis—Fred Shaw, Knox, won; C. S. Bragg, Fiat, second; Jack Darcy, Stoddard-Dayton, third. Time, 6:05. Handicaps: Shaw, 15 seconds; Darcy, 45 seconds; Bragg, scratch.  
Ten miles, match—Oldfield, Benz, won; de Palma, Fiat, out. Time, 9:36.  
Five miles, Gentilly Auto. Co. trophy, New Orleans championship—M. P. Irwin, Thomas, won by default.  
Ten mile, free-for-all—Kirscher, Darracq, won; Oldfield, Knox, second; De Palma, Fiat, third. Time, 9:32. Handicaps: Kirscher, 15 seconds; Oldfield, 32 seconds; de Palma, scratch.  
Ten-mile special handicap—Oldfield, Knox, won; de Palma, Fiat, second. Time, 9:47. Handicap: Oldfield, 28 seconds.

### VOTE FOR SUNDAY CLOSING

Detroit, Mich., Feb. 7.—Detroit's unique dealers' organization which has so successfully administered the affairs of the local shows, competitions and the various other details of their branch of the city's leading industry, has tackled the Sunday closing question and, at its annual jollification banquet at the Pontchartrain on Wednesday evening, February 2, voted unanimously to close the salesrooms of the organization on Sundays, from now on, until further notice. The dealers feel they should rest on Sunday.

Considerable attention was given in the post-prandial part of the program, to the proposed national show which President Lane announced would certainly take place here, in August, 1911. Assurances were received from a large number of the Michigan manufacturers of their intention of joining informally in the show to be given at the state fair grounds during August, 1910, and a committee of the dealers was appointed to assist the manufacturers' boosters who attended the Chicago show.



AT NEW ORLEANS—RALPH DE PALMA IN THE FIAT CYCLONE



## Columbia Deal Is Confirmed

NEW YORK, Feb. 6—There has been a confirmation of the rumor that the Columbia Motor Car Co., of Hartford, Conn., has been acquired by the United States Motor Co., the recently organized \$16,000,000 corporation which officially announces the completion of the deal. An important feature of the deal is that the royalties accruing from the Selden patent, which is controlled by the Columbia Motor Car Co., will be paid to the old stockholders of the Columbia concern. The Columbia Motor Car Co., which up to about a year ago was known as the Electric Vehicle Co., enjoys a unique position in the motor car industry, as it not only controls the basic Selden patent, but 128 other patents fundamental to the structural features of motor cars. When asked regarding the addition of the Columbia concern to the ranks of the United States company, President Briscoe of the Maxwell-Briscoe Motor Co. said:

"The patent situation in this industry is a most important and interesting one. I never had thought much about this phase of the business until the decision of Judge Hough was rendered declaring the Selden patent valid. This decision opened the eyes of the Maxwell-Briscoe Motor Co., as well as other independent motor car makers. It cost the Maxwell-Briscoe Motor Co. \$150,000 to protect Maxwell dealers and owners, to say nothing of the jeopardy to its future business. This jolt woke me up, so to speak. We immediately sent out patent attorneys to work on a thorough investigation with reference to motor patents and I must confess that the result was a great surprise to the Maxwell company, for we found that most every important structural feature of the present day motor car was covered by patents more or less fundamental, so that our company as well as others, was in a hazardous position.

"Furthermore, it appeared on investigation that the Columbia Motor Car Co. had a corner, so to speak, on practically all good patents. I considered these patents such a menace to the security of our business, that I immediately opened negotiations with the owners of the Columbia company, and I found they were very confident as to the strength of their posi-

tion. They had invested large sums of money in this branch of their business under advice of good counsel and had purposed to use these patents as a controlling factor in the motor industry, having been awaiting the decision in the Selden patent litigation. It seemed to me that for the good of the Maxwell concern and the industry as a whole, it was desirable to obtain the control of the patent situation by a company that would have mammoth facilities for manufacturing and distributing, and I advised the United States Motor Co. to purchase the Columbia concern.

"Preparations already have been made to construct 5,000 high grade cars annually in the Columbia plant, and within a short time from 2,000 to 2,500 hands will be employed, making the Columbia plant the largest in New England and one of the largest in the country."

### PARIS SHOW DISCUSSED

Paris, Jan. 27—For the first time in several months there was an important discussion with reference to a 1910 Paris show—to be held about the end of the year—within the general committee of the Automobile Club of France. It happened yesterday, when nearly all the big tradesmen, such as E. Mors, Marquis de Dion, Baron de Turekheim, A. Clement, G. Gobron, Louis Delaunay-Belleville, Chevalier Rene de Knyff, A. Michelin, A. Peugeot, L. Krieger, Renault, H. Panhard, etc., met for the purpose of discussing various important matters.

Speaking as the delegate of the newly organized motor car manufacturers' syndicate or association, Chevalier Rene de Knyff stated that far from wishing to divide the club or the trade the new association wanted to work hand in hand with it to their mutual benefit, and that the manufacturers' only desire was to arrive at a satisfactory arrangement whereby they would have a more liberal share of the show's profits.

Marquis de Dion answered as spokesman for the Automobile Club of France, stating that he is not opposed to studying the

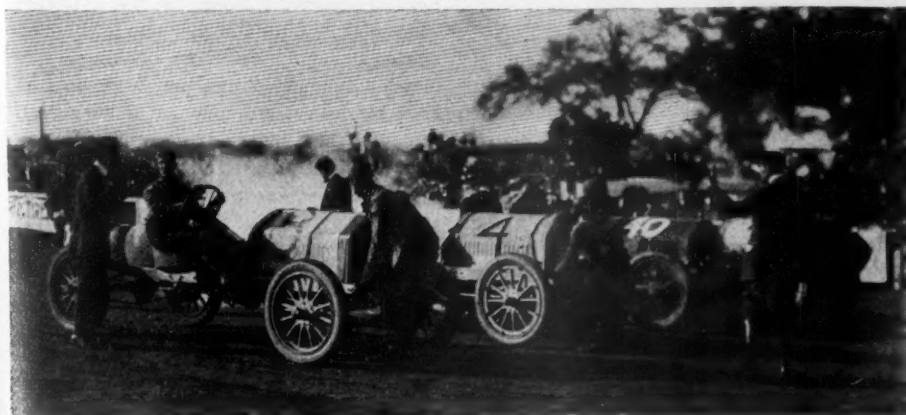
question of a new division of the show receipts. However, added the marquis, while it is true that the manufacturers who recently formed a new association have some times very big show bills to take care of, it must not be forgotten that there are a large number of small concerns which the club cannot forget or omit to take into consideration.

Other trade members spoke, among them Mr. Gobron, who approved what both the chevalier and the marquis had said. He suggested that the best way to get together or find a solution to the difficulty is to ask the various trade and sports syndicates or associations what they think of the question and have them offer their views. The idea or suggestion of Mr. Gobron was adopted and within a few days the delegates from the A. C. F. committee will receive the delegates from the various trade syndicates or associations in order to get their views. After that they will lay out a new schedule. All of which tends to show that the French makers, or rather the whole French trade, is quite anxious to have its former great Paris show replaced on the annual calendar. The success of the British show and of the more recent Belgian show has only been a greater stimulus for the Paris salon.

### MERGER TALK IN DETROIT

Detroit, Mich., Feb. 7—Interest in the local manufacturing circles has been held closely for several days by rumors, emanating from New York which have brought news of a possible amalgamation of the E-M-F company plants in Detroit with the new United States Motor Co. which has recently acquired the Columbia and Maxwell plants. The fact that President Flanders, Secretary Brownson and Publicity Manager Pelletier, of the E-M-F, are known to be in New York has lent strength to the rumor, while their absence has, conversely, made it difficult to secure affirmation or denial of the report. Detroit directors remaining in the city profess to know nothing of the proposed move and there the entire matter rests.

The E-M-F directors are still impatiently awaiting the decision of Judge Swan, of the United States circuit court, on the latest application of the Studebaker Automobile Co., of South Bend, for an injunction prohibiting the E-M-F from further marketing its own output. The federal jurist has a reputation for deliberateness in his methods, but 2 weeks have intervened since the matter was submitted and a decision is generally predicted within a very few days. The E-M-F factories have continued running at top speed and deliveries are being made at a rate more rapid than anything in the prior history of motor car manufacturing in Detroit, it is claimed by the company.



BIG FELLOWS LINED UP IN NEW ORLEANS MEET



# The Readers' Clearing House



## PROTECT LEGITIMATE DEALERS

**C**LINTON, ILL.—Editor Motor Age—I write this article for the purpose of trying to protect the legitimate dealer in a small town or territory, and for the eye of the manufacturer. Something must be done to protect the legitimate dealer in small towns or territories, for at present he has all kinds of competition which is not legitimate. With some makers all a man has to do is to buy a car, get his discount, go back to his home with a dealer's contract in his pocket, go on about his own business, and pay no attention to the agency which he took and got the discount on his own car. At the same time there is a legitimate dealer in his town, who is trying to do the right thing by everybody, trying to make a living for himself and family, representing the industry with all his money tied up in the business. But this is not all; the man who bought the car from the factory and got his discount has a friend who wants a car. He goes to see the dealer, and is about to buy of him, when in steps the fellow, and this is about the way he talks: 'Now, say, Bill, don't you buy of that dealer; you just buy a car like mine and save the discount on it just like I did.' Bill thinks that is a good thing, so he has this friend who has the agency buy him a car like his, and calls off his trade with the legitimate dealer. Just such a transaction occurred in this town. There were two bankers who went to Chicago and each bought a car, got the discount and agency, then came home and did not try to sell any more cars, but went on with their banking business. There are one or two legitimate dealers in the town, and these fellows, not satisfied with getting their cars with discount, took two of their friends to Chicago and sold each a car, deducting the usual discount. Here are four cars sold, and legitimate dealers frozen out. I leave this to the manufacturers to decide if this sort of a thing can be tolerated.—Earl C. Wasson.

## TWO-CYCLE QUESTIONS

Red Wing, Minn.—Editor Motor Age—Will Motor Age answer the following questions: 1—It is often said that the two-cycle engine gives more power on given weight, is cheaper and more simple than the four-cycle. Why is it, then, that there are so few two-cycle cars on the market? 2—Some time ago I read in these columns the names of two-cycle car builders, and I noticed that there are only a very few and most of them not very well known in this part of the country. How many two-cycle cars were built in 1909, and how many four-cycle? 3—Why is it that the three and five-cylinder, four-cycle engines are entirely neglected? 4—What are the

**EDITOR'S NOTE**—In this department Motor Age answers free of charge questions regarding motor problems, and invites the discussion of pertinent subjects. Correspondence is solicited from subscribers and others. All communications must be properly signed, and should the writer not wish his name to appear, he may use any nom de plume desired.

## NOTICE

Motor Age has received communications addressed to the Readers' Clearing House from the following named towns and nom de plumes:

Detroit, Mich.—Motor Bug.  
So. Braintree, Mass.—New Subscriber.  
Vienna, O.—A Subscriber.  
Cincinnati, O.—Thankful Subscriber.  
Vancouver, B. C.—An Interested Reader.

These communications will be held until the proper signatures have been received. All communications written over a nom de plume must bear the writer's signature, otherwise such communications will not be answered. These signatures are wanted as proof of the authenticity of the inquiries.—Editor Motor Age.

objections, if any, to the two diameter piston type of two-cycle motors? 5—Who are using such motors in cars?—H. F. Oliva.

1—For the past 2 or 3 years many articles have been written bearing on the relative advantages of the two- and four-cycle motor for car driving. The question has been so thoroughly threshed out, as well in theory as in practice, that the average reader is satisfied that the two-cycle motor is entirely practical for car driving. Any doubt of this fact will be very quickly dispelled by a review of the several very successful American cars which are propelled by two-cycle motors. An important point which has deterred many a builder of cars from adopting a two-cycle motor in his car, is the fact that the four-cycle motor generally is better understood by the public than the two-cycle motor. The first motor car which came to this country was a French four-cycle car and the first men who went in the car business were following the French line. Later when the demand for cars became greater and Smith started to build cars, he copied the French car with the four-cycle motor. Jones copied from Smith, Brown borrowed Jones' design, Murphy changed the Brown motor in experience only, and Smith watched Murphy's work very closely. The two-cycle motor design requires good engineer-

ing ability and expensive experimenting. The writer knows of a two-cycle motor manufacturing concern which put the first motor on the market after 5 years' work of costly experiments.

2—Motor Age does not know the exact number of two-cycle motor cars built in 1909, but 6,000 or 7,000 is a good guess. There were about 175,000 cars built in the 1909 season.

3—There is no reason whatever why three or five-cylinder four-cycle motors should be entirely neglected. There is a great number of three-cylinder, four-cycle marine motors used and they run just as perfectly as a four-cylinder motor. Motor Age has no experience with five-cylinder four-cycle motors, but if you write to Charles Winter, Lynbrook, Long Island, N. Y., he might tell you about his experience with a five-cylinder, four-cycle, 4 by 4 mobile motor.

4—There are no objections to the two-diameter piston type of two-cycle motors except that it makes a costly and heavy motor; the cylinders are tall and heavy. Air valves must be used. A two-diameter piston two-cycle motor can be made as to be far superior to any crank box pressure cylinder supply motor as far as the flexibility of the motor is concerned.

5—The 1910 four-cylinder Elmore car has a two-diameter piston motor, called the High Duty 46. The Euclid car, built by Mr. Palmer some years ago, has a three-cylinder two-diameter piston. The first engines of the Wisconsin Machinery and Mfg. Co. were of the two-diameter piston type, but were replaced by the valveless type. Motor Age never has yet seen a well-designed two-diameter piston type two-cycle motor working.

## VACUUM OILING SCHEME

Trenton, N. J.—Editor Motor Age—I have a 40-horsepower car, built in 1907, which has a six-feed mechanical oiler, one feed to each of the four cylinders, and one feed to the front and rear crankshaft bearing, with no feeds to the crankcase. This oiler has proven to be entirely inadequate to supply sufficient oil for a speed greater than 20 miles per hour, it being necessary to stop every 25 or 30 miles to replenish the oil in the crankcase. Not knowing whether I had sufficient oil in the crankcase, except by seeing the smoke, has been a cause of discomfort and worry that has taken the pleasure out of an otherwise delightful trip. Last winter I placed an oil tank in the box under the rumble seat and an oil pump above the floor between the seat to be operated by the driver or passenger. This was a vast improvement, as I could drive as fast as I wanted and could ride 100 miles without



leaving the steering wheel. What I now want is to maintain a fixed oil level in the crankcase at all times by a gravity feed. I will make an air-tight oil tank T under the rumble seat with  $\frac{3}{8}$ -inch pipe running from the tank to the crankcase; I will arrange an adjustable pipe Y either side of the partition P in the crankcase, and as the engine uses the oil more will flow down to replace that used. A valve V to be placed in the pipe line closes when filling the tank. The only serious difficulty I see in this device is to keep everything air-tight. I will use this in conjunction with the present mechanical oiler. Does Motor Age think this scheme practical?—J. H. Morris.

Your scheme is all right providing the pipe connecting from the tank to the crankcase is large enough. A similar system to this is used on the Everitt car, although in this case the oil tank is carried on the side of the cylinder, so there is a short straight flow from the tank to the crankcase. It is a certainty that with this system as soon as the oil level falls beneath the open ends of the oil pipes, air bubbles will rise through the pipe to the tank and oil will flow into the crankcase.

#### CRITICIZES TIRE MILEAGE

Carthage, S. Dak.—Editor Motor Age—I think there was some mistake made in Motor Age, issue January 13, page 11, where a statement is made that the Elmore uses a contracting band clutch, as the Elmore 1910 and, I think, also, the 1909 use expanding band. While I am writing to this department, which I do not very often find time to do, I wish to say that too many writers are not careful enough in their letters to this department of Motor Age or their letters are intended deliberately as an advertisement for some particular article. For instance, I saw not long ago three or four consecutive letters from different readers of Motor Age which lauded a certain make of tires, telling what great mileage they made on them and what a wonderful service they gave. Now it chanced to be my somewhat unpleasant experience to purchase a car last spring which was fitted with that very same make

of tire. The car was not too heavy for the size used, either, for the machine weighed about 2,200 pounds and the tire used was a 4-inch one, which is conceded to be sufficient. I drove this car over ordinary country roads just 750 miles and the wonderful tires virtually went to pieces. I sent them back to the factory's branch at Chicago, and after paying them a good, stiff price for the mileage the tires made, which was about 15 cents per mile, I got a new set. I used two of them and sold the other two to another party. Meanwhile I bought two tires of another make, which I placed on the rear wheels. In less than 1 month—about 1,000 miles of actual travel—the said wonderful tires again went to pieces, and not only for me, but for the party to whom I sold the other two, all of which were placed on front wheels. The tires—which, by the way, I have not seen mentioned by anyone as being anything special—that I placed on the rear wheels of my car at that time have seen service ever since, traveling about 6,000 miles, and I must say they are as good as when they were placed on them.

Now the point I wish to make is simply this: Other readers taking Motor Age are, like myself, influenced more by what is in the Readers' Clearing House than in the advertising columns, and I am satisfied that I can give the names of ten motor car users right in this vicinity who will say that the tire that man lauded so much did not give them an average service of 1,000 miles. On the other hand they are now using the tire I adopted after my sad experience with the ones I bought with the car, and they can not say too much in their favor.

If this is not too lengthy, I wish to further say that I am glad Motor Age has taken the stand in favor of the user. The matter of tuning up before the cars leave the factory, the matter of accessibility, and the matter of too small tires for the weight of cars, are three most important things before the makers right now. They must realize it means serious injury to their reputation if their car, when it reaches the agent, must go through a

process of tuning up, for the average buyer thinks it is actually being repaired, and this of course is not conducive to a sale. As for the tire size, I know that the average purchaser would rather pay the difference in actual cost and get tires that would give him service than buy his car and find his tires are too small for its weight, which naturally means that he is out the price of a new set of tires in one season or less. There are too many cars on the 1910 market that are skimping on size of tires. A lot of those using  $3\frac{1}{2}$ -inch tires should have 4-inch, and a lot of those using 4-inch should use  $4\frac{1}{2}$ -inch or even 5. My experience is that if you don't get a tire large enough to sustain the weight of your car and the load in it, you are going to be the loser. Small tires don't give the mileage for the money that large tires do. —Charles E. Barkl.

#### HAVE LIMITED STEAM CARS

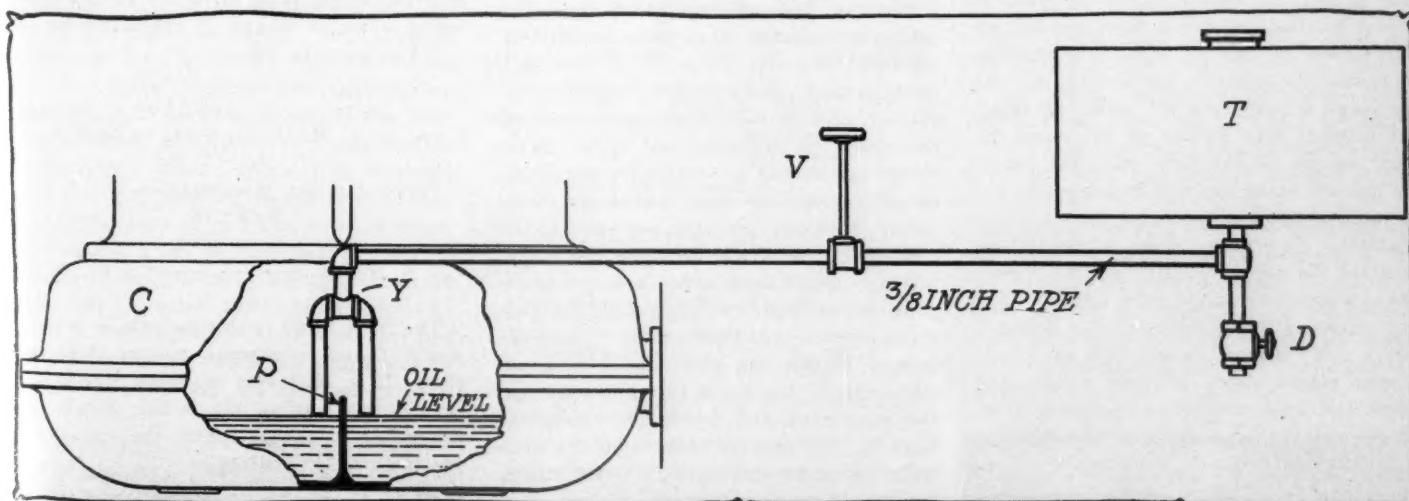
Los Angeles, Calif.—Editor Motor Age—Robert G. Davis asks on page 102, Motor Age, issue December 30, why so many more gasoline cars are used than steam cars. If he will consult the name plates on the three prominent steam cars built he will find the following:

White .....	15 patents
Stanley .....	21 patents
Lane .....	24 patents

These patents cover the field so completely that no other practical steam car can be built, until said patents expire. A dozen builders have attempted to make other steam cars but dare not infringe.—J. A. T.

#### LONG VS. SHORT STROKE

Chicago—Editor Motor Age—I have read with much interest the arguments for and against the long-stroke motor, in the columns of Motor Age, but in all the discussions everything is reckoned from the same size bore, that is, two engines, one long and one short stroke, both having the same bore. There is no question but that the one with the long stroke is the more powerful. This does not necessarily mean that the long-stroke engine is the better. I am not an engineer or even a mechanic, but it seems to me that if two engines draw in the same amount of gas on the suc-



DESIGN FOR VACUUM OILING SYSTEM

tion stroke, being equally well made, etc., they ought to give about the same horsepower at the same number of revolutions a minute, regardless of whether the motor has a long or short stroke. Some horsepower formulæ might be built up on that principle if it is true.

I have two engines, one with a large bore and a short stroke, the other with a small bore and long stroke, both drawing in the same amount of gas and giving the same amount of power at the same number of revolutions per minute, it seems to me that the one with the short stroke and large bore would have every advantage. It would not wear out so quickly, because the bearing surface would be greater and the distance the piston travels shorter. It would be more efficient because of the greater piston area and so much energy would not be wasted on the sides and top of the combustion chamber. It would be capable of much greater speed than the other engine and in case of an overhead engine the valves could be larger. To compare a short-stroke motor with a long-stroke, both of the same bore, is not fair because they are not the same horsepower. If two engines give the same power at the same speed they have the same horsepower. If one has to go twice as fast as the other to develop the same power then it is only half as powerful. Another thing: People seem to think that the larger the bore the larger the engine. This is not true. As a matter of fact an engine with cylinder sizes 6 by 5 inches would be smaller and take up less room than one measuring 5 by 8 inches?—Subscriber.

#### LOW CARS AND SKIDDING

Lafayette, Ind.—Editor Motor Age—Will not a car of low center of gravity—as a toy tonneau or racing cars—tend to skid more readily than one of high center of gravity, a touring car for instance? In the New York Central accident at Woodlawn several years ago the electric locomotives had the motors on the axles. On a curve not sufficiently superelevated it was held that these locomotives hit the outer rails hard enough to break them, due to their low center of gravity, whereas steam locomotives had a more springy effect—they tended to turn over instead. Whereas the electric locomotive hit the rail such a hard outward blow, the steam locomotives bear lighter on the inner rail and heavier on the outer rail—the center of gravity being about 8 inches above the ground, as against the 2 or 3 inches of the electric. Of course those electric locomotives did not have guiding truck wheels then, which since have been applied. For the reason above mentioned the Pennsylvania's new electric locomotives have their motors placed above the road wheels, and drive the road wheels by connecting rods. Might not the same apply to the skidding of motor cars?—A. L. Sheridan.



It is impossible to figure accurately the skidding tendency of cars where the center of gravity scarcely varies an inch. You are right in your assumption that the lower the center of gravity the easier the skid, but the danger of the skid is so slight as compared with that of upsetting as to not be considered. In racing cars for track purposes drivers have found that the lower they are the better, in that the surface which offers resistance to the wind is reduced, and the danger of overturning eliminated. Track drivers with such cars count on a certain amount of skidding. One or two readers of Motor Age who have observed cars with low center of gravity in road races, have reported an undue amount of tire trouble on the turns which might be interpreted as being due to skidding.

#### BEST TIMING SCHEMES

Denison, Ia.—Editor Motor Age—It is claimed that it is harder on a car to run from 5 to 15 miles an hour than to run from 25 to 40 miles. Is this true, and if so will Motor Age explain the reason, and the part or parts of the car damaged by the slow speed? Does Motor Age think favorably of having the clutch and brake operated by the same foot pedal? If there are objections to this, what are they? What does Motor Age think of tire protectors? Are they of value and do they add to the running expense of the car?—Denison.

The best speed from both the economical and wearing standpoint at which a car can run, is that speed resulting from a throttle nearly closed and the spark as early as possible; this will vary with the make of car and motor. To run slower than this will necessitate having the spark late and the throttle more open, making the motor more liable to heat. Some makers of motor cars follow the practice of only one pedal for both clutch and brake, and it is satisfactory as to whether it is better than to have a separate pedal for each depends upon what the operator has been accustomed to. The object of tire protectors is to cut down the tire expense.

#### WANTS HORSEPOWER FORMULA

Decatur, Neb.—Editor Motor Age—The editorial in Motor Age, issue January 27, entitled "Wanted—Horsepower Formula," prompts me to say a word in regard to the subject, namely, Why do not manufacturers get down to business and solid facts? Every car should be sold under a guarantee of horsepower—that is, the old steam power formula, as obtained under the brake. I have a car rated by the manufacturers at 16 horsepower and a 4-horsepower steam engine at 100 pounds pressure, which pulls it over Pike's peak. Under the present rating, the only way a man can make sure of his car is to take it out into the mountains and try it out before he buys it. No two cars are rated the same with the same size cylinders and stroke. It seems to me manufacturers are purposely working a blind, so that they can put down

any old rating that will sell the car. It does not help the trade among the country people for one of their acquaintances to buy a 30-horsepower car and when negotiating a hill to be compelled to have his family get out and walk which, to my knowledge, often happens on the country roads.—P. B. Gordan.

#### CLINTON-CEDAR RAPIDS MILEAGE

Philadelphia, Pa.—Editor Motor Age—I note W. W. Ogden's communication in Motor Age, January 20, page 18, regarding the mileage between Clinton and Cedar Rapids, which, in the account of the Regal Plugger's trip from New York to San Francisco, is placed at 150, whereas Mr. Ogden claims it to be 94. This discrepancy is due to the fact that at the time the Regal made the transcontinental trip Iowa had been deluged by a succession of rains, which necessitated numerous detours from the direct route and which accounts for the added mileage.—George D. Wilcox.

#### WINTER DRESSING FOR TOPS

Milwaukee, Wis.—Editor Motor Age—Will Motor Age give me the name of a good preparation for softening and preserving the leather upholstery on a motor car, especially during the trying winter months?—E. W. Krauthoefer.

There are a great many preparations which may be secured for preserving leather tops. Several of these are handled by motor car supply houses, one of which is Auto-Gloss. Some standard preparations for this work are colon oil, coconut oil, and neats foot oil.

#### STRIBLEY'S FORMULA

Dubuque, Ia.—Editor Motor Age—Here is a very short horsepower formula which takes the stroke into consideration:

$$D \times S \times N \\ HP = \frac{\quad}{3}$$

D = Diameter of cylinders.

S = Stroke of engine.

Take for example a car with a 5-inch bore, 6-inch stroke, and either four or five cylinders. In this case, taking both the A. L. A. M. and the formula under consideration, would give the same horsepower which would be 40 and 60, respectively.

White gasoline car—

$$\frac{D^2 \times N}{3.75 \times 4} \\ A. L. A. M. HP = \frac{\quad}{2.5} = 22.5$$

Formula under consideration—

$$\frac{D \times S \times N}{3.75 \times 5 \frac{1}{8} \times 4} \\ HP = \frac{\quad}{3} = 25.6$$

The fault I find in this formula is that it would favor long-stroke motors, just as the A. L. A. M. favors the large bore in its rating, but I think the stroke should be taken into consideration in the rating of gas motors.—I. Stribley.





# GASOLINE MOTORIST'S FRIEND, NOT ENEMY

CONSIDERING the large number of people who handle gasoline for one purpose or another, it is surprising that so few really understand the nature of the fluid. There is but little foundation in fact for the stories of terrible gasoline explosions in motor cars and on power boats that we read in the newspapers. The carrying of large quantities of gasoline in fuel tanks is written about as though it were so much dynamite waiting for only half a chance to blow the whole outfit into atoms. It is the object of this article to show the peculiar conditions under which accidents occur, how they can be avoided, and a few general suggestions as to the proper means and appliances to employ to make accidents practically impossible.

A gasoline explosion is simply a very rapid combustion causing great heat and consequent expansion of the gas resulting from this combustion. This rapid expansion is what causes the piston to be driven downward when the charge is ignited in the cylinder.

Since combustion of any substance is only possible in the presence of air or oxygen, and since gasoline contains neither, it is readily seen that it can not be ignited in a tank, in other words in a liquid form. In order that gasoline, or in fact any liquid fuel, can be ignited, it must first be vaporized, then mixed with the proper proportion of air. Whenever air comes into contact with gasoline the process of vaporization is set up and the gas resulting is, in general, combustible. It is not combustible, however, unless the proportions of gasoline vapor and air are within certain limits. A combustible mixture is rendered incombustible by the addition of more air, thus diluting it, or by adding more vapor, enriching it. This is readily understood when it is remembered how carefully the needle valve must be adjusted that ignition in the cylinder may result.

Gasoline is what is termed a highly volatile substance, in other words, it vaporizes easily. The application of heat causes the liquid to gasify. At or below a certain temperature it remains liquid and at higher temperatures vaporization takes place. This vaporization in the presence of air is productive of a combustible mixture, but when vaporized in a closed tank the gas resulting is not combustible. The application of heat alone in any quantity can not cause an explosion. If the containing vessel be closed the application of heat might cause sufficient pressure to burst it, but so long as the vapor does not come into contact with the flame and in the presence of air, no ignition or com-

**EDITOR'S NOTE**—The following article on the handling of gasoline will be interesting to motorists. It was written by Volney E. Lacy and appeared in the Co-operator, the Maxwell house organ.

bustion will result from this cause. If a can of gasoline be set on a stove, it will boil away just as water would. Now, supposing this can to have a small vent in the top just sufficient to relieve the pressure caused by the expansion due to heating, a match applied at this opening will simply cause the issuing gas to burn just as the gas from a jet in your home. It is no more possible for the flame to enter the can than for the flame at the gas jet to run back into the pipe. This is just the condition prevailing in a gasoline tank in a car. The atmosphere above the gasoline in the tank would, in almost no instance, contain more than a very small percentage of air. For this reason it would be next to impossible for the tank to explode. Explosion of the tank could not take place other than by flame entering and causing greater pressure than the vent could relieve or the tank would stand.

We often hear stories about fire actually running back through the gasoline pipe to the tank. This is ridiculous in the face of the foregoing statements. Simply remember that there being no air and gasoline vapor in mixture in the proper proportions, there can be no fire or explosion.

Under the most favorable conditions it takes considerable heat to cause a mixture of gasoline vapor and air to ignite. The popular story about a gasoline fire being caused by the proximity of a lighted cigar is a myth. It takes more heat than that on the end of a cigar to cause ignition. To immerse the end of a lighted cigar into a dish of gasoline would have no other effect than though it were so much water. The ignition of a mixture of gasoline vapor and air requires a flame or electric

spark, or red hot iron, etc. The only danger, so far as the cigar is concerned, is due to the match which lights it.

All this goes to show that gasoline is not the terribly dangerous substance that it is generally supposed to be, when handled with reasonable precaution. The chief requirement for safety is that tanks and piping be provided of such character as to preclude the possibility of leakage. There is no danger whatever from any gasoline contained in tight tanks. The fact that gasoline vapor is heavier than air causes it to lie in the lowest places.

In case a fire should break out, do not waste time by throwing water upon it. Gasoline is lighter than water, and since the two liquids will not mix, the gasoline will float, and throwing water upon it further agitates the gasoline, causing more gas to be given off, consequently there will be more fire instead of less. Every motor car should be provided with a good fire extinguisher so placed that it can be reached quickly. A very excellent fire extinguisher is a bottle of siphon seltzer or soda. A stream from one of them directed upon a gasoline blaze is about as effective as any thing that can be used.

A source of danger in many motor cars is that of leaking of gasoline from the bottom of the carbureter. This may be due to a leaky float valve or to slopping out of the air intake while the engine is running. Any float-controlled valve may at some time or other become fouled by dirt in the gasoline, preventing its seating and consequent overflowing of the float chamber.

Another source of danger is that of ignition of gasoline vapor in the inlet pipe, commonly known as back-firing. This is usually due to a rare mixture. Other than by too close a regulation of the needle valve, it is caused by stopped up pipes or water in the gasoline. This is further reason for the provision of adequate means of cleaning the fuel before it is allowed to enter the long pipes leading to the carbureter. The flow of the gasoline from tank to engine is so slow that any dirt that collects in low places in the pipes remains lodged there and finally closes the pipe entirely at that point. This illustrates the advisability of using strainers and funnels covered with chamois skin.

Providing that the necessary precautions are taken to prevent the accumulation of free gasoline or gasoline vapor in the car there can be no possibility of explosion or disaster due to a gasoline fire even though a thousand gallons of it be carried on the machine.

## COMING MOTOR EVENTS

### FEBRUARY.

- 5-12—N. A. A. M. show, Chicago Coliseum.
- 6-14—Independent show at Los Angeles, Calif.
- 14-19—Show at Rochester, N. Y.
- 14-19—Show at Hartford, Conn.
- 14-21—Show at St. Louis, Mo.
- 14-18—Annual show at Buffalo
- 16-19—Show at Grand Rapids, Mich.
- 19-26—Annual show at Minneapolis, Minn.
- 19-26—Show at Newark, N. J.
- 19-26—Inter-mountain show, Salt Lake City, Utah.
- 19-26—First Cleveland show.
- 19-27—Licensed dealers' show at Los Angeles, Calif.
- 21-26—Show at Binghamton, N. Y.
- 21-26—Annual Cincinnati show.
- 21-27—Omaha show.
- 22-27—Milwaukee show.
- 23-26—Annual show at Denver, Colo.
- 24-March 3—Canadian motor show at Toronto.
- 28-March 5—Kansas City Automobile Dealers' Association's show.

### MARCH

- 5-12—Second Cleveland show.
- 5-12—Boston show.
- 7-12—Show at Albany, N. Y.
- 21-28—Denver Motor Club show.
- 26-April 3—Sportsmen's show at Montreal.





# From the Four Winds

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**Seattle's Good Roads**—Seattle, Wash., has now 132 miles of paving of various materials, 42 miles of which were laid during the past year.

**Another Use For Car**—A large motor car recently was put to a unique use at Olympia, Wash. The management of a skating rink in that city conceived the idea of attaching two grindstones to a motor car by means of ropes, and on these two youths crouched and after riding around the rink for a distance of 30 miles the floor had been worn to a uniform polished surface.

**Oregon Organizes**—Articles of incorporation were filed during the past week by the Oregon State Automobile Association. The trustees of the organization are J. H. Albert, George W. Sanborn and W. O. Van Schuyver. The object of the association is to promote the improvement and laying out of highways within the state, to encourage proper highway maintenance, to accomplish the proper marking off of highways, to urge just and rational highway legislation and to promote speed and endurance contests for motor vehicles.

**Reorganizing Columbus Club**—A plan is on foot for a complete reorganization of the Columbus Automobile Club of Columbus, O., to be modeled after the clubs at Cincinnati and Cleveland. Heretofore several of the officers have been doing all the work and taking all the responsibility. Now it is proposed to elect a board of governors, whose duty it shall be to meet weekly with a salaried secretary and to pass on all matters. It is believed the new plan will be more businesslike. A new constitution and by-laws are being drafted which will be presented at a special meeting of the club to be held in February.

**Hoosier Show Plans**—At a meeting of the Indianapolis Automobile Trade Association last week, plans were completed for the annual motor show to be held in Indianapolis during the week beginning March 28. It also was decided to raise an expense fund of from \$2,500 to \$5,000 among members of the association and to appropriate \$500 for silver trophies to be given as prizes in connection with the outdoor events. Monday and Tuesday will be devoted to the display of cars. The first public event will be a floral parade Wednesday afternoon. A departure from past years will be a program at the Indianapolis motor speedway Thursday afternoon. Heretofore the speed trials and obstacle and novelty races have been held on downtown streets. The program at the speedway will include short speed races, tire-changing contests, exhibitions of fancy driving and egg and obstacle

events. There will be a parade Friday afternoon exclusively for commercial cars, while the closing event will be a banquet Saturday night.

**Malden Buys Fire Wagon**—Fire Commissioner Hough of Malden, Mass., is a firm believer in the motor chemical fire wagon. One has been ordered and this will be delivered April 1 and now the commissioner suggests that the city arrange to order another one.

**Show at Grand Rapids**—Grand Rapids' first motor show is to be held in the Furniture Exhibition building February 16-19. Every dealer in the Michigan city has taken space for the show, so that thirty-six makes will be on display. Each dealer will show from one to ten cars. The decorations will be extensive, light green prevailing in the color scheme. Great interest is shown in the display, not only in this city but throughout western Michigan.

**Milwaukee Show Outlook**—Arrangements for the second annual motor show under management of the Milwaukee Automobile Club in the new \$500,000 Auditorium, February 22 to 27, inclusive, are progressing nicely, and General Manager Clarke S. Drake, president of the club, believes that eastern and western manufacturers will be pleasantly surprised at the magnitude of the exposition. This year the club will make the show an elaborate social function and Milwaukee society leaders are taking a deep interest.

**Election Postponed**—The annual meeting of the Bay State A. A. was held last week in Boston, but there was no election of officers at that time. The matter has been deferred until later, a committee of nine having been appointed to take up the matter of moving to other quarters downtown and also being empowered to select a list of officers. The club has an old lease for the building on Dartmouth street that it formerly occupied that has been thrown back on its hands and this will have to be straightened out before anything else is done.

**Another Chauffeurs' Club**—The Portland Chauffeurs' Club, of Portland, Ore., organized within the past 2 months, now has a membership of upward of 200 members. The declared objects of the club are to create and encourage a higher standard of skill and proficiency, and to promote confidence and good will among the chauffeurs and their employers and also to secure the good will of the dealers of the city. Membership cards are being given only to those who can pass a rigid examination. The following are officers of the club: C. B. Lloyd, president; Walter Witmer, vice-president;

Charles E. Marvin, secretary; L. F. Templeton, treasurer. The club is incorporated for \$2,000 with shares taken by the members running in blocks from \$5 to \$50.

**Delivers Milk By Motor**—Certified milk delivered by motor car in any part of Portland, Ore., is being accomplished by Michael Spahn, a dairyman, who has promised his customers that all will be served not later than 9 a. m.

**Marshall Names Delegates**—Governor Thomas R. Marshall of Indiana has named Carl G. Fisher and Clarence A. Kenyon delegates to the national legislative convention which will be held in Washington, D. C., February 15 to 17 inclusive. Mr. Fisher is president of the Indianapolis Motor Speedway Co., while Mr. Kenyon is a paving expert who has done much to advance the cause of good roads.

**Wisconsin Registration**—The Wisconsin secretary of state says there is much confusion relative to the Wisconsin registration law, not a few owners believing it like the Michigan law requiring annual license fees. The Wisconsin law provides that all who register prior to June 19, 1909, when it went into effect, must pay an additional fee of \$1, and owners registering thereafter must pay \$2. About three-fourths of the owners who registered prior to June 19 have paid the additional fee, although the time limit has long since expired.

**Solves Traffic Problem**—A Sacramento, Cal., man who runs a stage line between that city and Folsom solved the problem of carrying an increased number of passengers without overloading his car or tires, in an original way. He took one car and attached the back part of another to the rear axle. Thus he was able to carry practically twice as many passengers as before at the same expense. The car is equipped with Morgan & Wright tires, and he reports that the car has been running between the two cities 4,500 miles a month for the past 3 months, 13,500 miles in all, with no trouble from either car or tires.

**Pierce-Arrow Classes Start**—Eleven classes will be given instruction in the school conducted by the Pierce-Arrow Motor Car Co. at Buffalo this year. The school is in charge of men in the mechanical department of the company and the course, lasting 2 weeks, consists of experience in the assembling, maintaining and driving of cars. No charge is made, but the entries are confined to chauffeurs who are employed by Pierce-Arrow owners, repair and garage men who have the handling of cars of this make and owners who are mechanically inclined. Nine of the eleven classes are for chauffeurs and one



of these is for colored men exclusively, the time for this class being from February 28 to March 12. Repair and garage men will have April 11-23 and owners May 9-21. Entrance to the school is obtained through a letter from a dealer.

**Has Rooms in Tower**—The Flat Tire Club of Indianapolis, which heretofore has held its sessions daily in a downtown cafe, has engaged club rooms in the tower of the Denison hotel, including a private dining room where lunch is served at noon each day. The club is purely a social organization of tradesmen and has about fifty members.

**Favors Single Trunk System**—Governor Hay, of Washington, at a recent meeting of the Grangers of Thurston county, expressed his ideas in regard to the trunk system of roads in Washington, stating that as long as the present system of taxation was in vogue that the single trunk system was the only feasible plan of building state highways, so that the citizens of the populous districts and the settled communities would get the benefit of the highways.

**New Yorkers Organize**—Further steps in the formation of the Licensed Automobile Dealers of New York were taken at the Automobile Club of America. There were thirty-eight dealers present, representing over forty makes of cars licensed under the Selden patent. A board of directors was nominated as follows: George W. Bennett, Sidney B. Bowman, M. J. Budlong, J. T. Cutting, Harry Fosdick, Robert D. Garden, Carl H. Paige, J. F. Plummer, James Joyce, Charles E. Skinner.

**Pierce-Arrow Statistics**—Recently a list of the licenses granted in western New York for a period of a little over 2 years was compiled by the Pierce-Arrow people. It showed that of the cars of approximately the same price 883 cars of six makes had been given numbers by the state. Of this number 430 or 48.7 per cent were Pierce-Arrows. The others, five makes in all, had 453 cars in western New York or 51.3 per cent. The greatest number of any one make, aside from the Pierce-Arrow was 252 or 28.5 per cent, this car being one made in the same territory. The others ranged from 96 cars or 10.9 per cent down to 4 cars and .4 per cent.

**Against a Federal Law**—After a heated argument in which a number of the members spoke, the Columbus Automobile Club of Columbus, O., decided not to lend its support to the movement to have enacted a federal registration law, as is agitated by a number of members of the A. A. A. It was the consensus of opinion that a federal registration law was of little use to the average motorist, while it is important to have more uniformity in the state registration laws. So the effort of the members of the Columbus club will be spent towards aiding certain states to enact laws or amend their existing statutes, to bring about as little inconvenience as possible

in the ranks of motorists. It was decided to give another motor show some time during the holidays. Sentiment appears to be against the holding of races next summer, although an effort will be made to have a 24-hour race.

**New Ohio Club**—The Automobile Club of Stark County was organized at a recent meeting held at Canton, O. A fee of \$5 is charged to all members, which entitles them to membership in the A. A. A. The club started off with 126 members. Officers were elected as follows: J. H. Kenny, president; Charles Steese, Jr., Masillon, vice-president; W. A. Hoberdier, secretary-treasurer. The board of governors consists of Edward E. Bender, J. R. Dangler, Jr., John Sherer, W. L. Stolzenbach and J. G. Best.

**Change in Secretaries**—Arthur M. Crumrine, formerly motor editor of the Columbus News, has been elected assistant secretary of the Columbus Automobile Club, of Columbus, O., succeeding Harry D. Sims, who resigned the first of the year to become sales agent for the Charles Schiear Motor Car Co. Norman O. Aeby, secretary of the club, has been placed in charge of the Pittsburg office of the Jeffrey Mfg. Co. and will be forced to be absent from the club a large part of his time and the duties of the assistant secretary will be much more important than formerly.

**Louisville Show Prospects**—There is but little space left for the third annual show of the Louisville Automobile Dealers' Association of Louisville, Ky., which takes place in the Armory on March 17, 18 and 19, and this will be taken up within the next few days. Every local dealer is over-eager to be represented. The price of admission will be 25 cents for afternoon and evening sessions. An effort will also be made to have the different railroad companies running into Louisville make a rate of one fare, plus 25 cents, for the round trip. This is with the view of bringing a large attendance from out in the state and from southern Indiana.

**Terry Makes a Speech**—Strongly opposing the proposed motor car legislation now before the New York state legislature at Albany, N. Y., Charles F. Terry of New York, representing the Automobile Association of America and the National Automobile Manufacturers' Association, recently told the assembly committee on internal affairs in Albany that the present motor vehicle law in New York state, with slight changes, is ample to protect the public. Rigid speed limitations, he contended, not only make for graft but fail to protect the public and the matter of neglect can be left safely to the courts to be determined by the particular circumstances of each case. He favored taking measures for more completely identifying machines by larger signs illuminated at night. Motor car owners, he said, prefer the Allds-Hamm bill passed by the last New York state legislature and vetoed by

Governor Hughes to any of the bills now pending and it would be easy, if necessary, to remove the cause of the governor's objections.

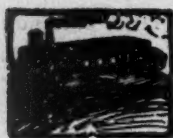
**Raising Road Fund**—The good roads fund of \$750 a month in Portland, Ore., is nearly complete. Portland business men have subscribed nearly \$600 to date and it is stated the balance is assured. Money is being given by advocates of good roads throughout the state of Oregon, and the fund as it now stands aggregated nearly \$10,000 a year.

**Buffalo Club Entertains**—The third of a series of winter entertainments was held at the rooms of the Automobile Club of Buffalo, February 2. The program consisted of a practical talk, illustrated, on the gasoline motor and its application to the motor car by Charles L. Sheppy, superintendent of construction of the Pierce-Arrow Motor Car Co., who delivered an interesting lecture.

**Club at Galveston**—The Galveston Automobile Club, of Galveston, Tex., has been chartered at Austin, the state capital. The charter members are: W. L. Moody, Jr., Sealy Hutchings, George Sealy, Bartlett Moore, J. W. Munn, Moritz O. Kopperl and John Sealy, some of the most prominent men in Galveston. The membership probably will run into the hundreds in a short time. There is no capital stock, the purposes of the organization being to promote the sport of motoring, work for the good roads movement and otherwise aid the interests of motoring.

**Urges Road Oiling**—Representatives of the Standard Oil Co. have been visiting several cities of Wisconsin during the last few weeks to interest the common councils in the plan of using crude petroleum for street sprinkling. Figures based on tests in Milwaukee are being used to good advantage, although it is doubtful if the plan will be practicable in cities without asphalt, brick and cement pavement. Milwaukee has contracted for 500,000 gallons of oil for next year's extensive street sprinkling scheme. The city of Oconomowoc, one of the best known summer resorts in the west, has practically decided to follow the plan.

**Raises Health Standard**—According to City Health Commissioner J. C. Crichton, of Seattle, the medical profession as a whole, will within the next 6 months back up the assertion that the motor car is doing more to raise the health standard of the world than any other thing or institution. In driving the horse and the attendant barn out of the residence section, he declares the motor car is ridding the country of fully 98 per cent of the typhoid fever germs, and that other diseases will decrease correspondingly. Besides the uplift which the motor is giving the fight against typhoid fever, it also is adding its help to the fight against tuberculosis, so the doctors on the Pacific coast believe in the motor car as a friend of mankind.



# Among the Makers and Dealers



**Has Big Floor Space**—The Underhill Co. of Boston, which has the agency for the Knox, has moved its repair shop to Cambridge, where it has 10,000 square feet.

**Triples Its Capacity**—The Oldsberg Co., of Detroit, Mich., maker of mufflers, has been obliged to triple the capacity of its plant owing to the large increase in its business.

**Gets the E-M-F**—Announcement is made that the E-M-F and Flanders Boston agency has been given to Charles Addison Malley. B. N. Crockett is to be manager of the agency. The salesrooms will be on Boylston street, where the Columbia and Stearns are now being handled by J. H. MacAlman. The latter is to move to Massachusetts avenue shortly.

**Great Western Appointees**—Appointments of Great Western agents are announced as follows: W. N. Crow, Millersburg, O.; Cruse Brothers, Champaign, Ill.; C. M. Blair, Bartlett, Tex.; Earlywine & Louis, Mentone, Ind. The Great Western company has just completed its new blacksmith shop, assembling plant and paint shop at Peru, Ind., there being a side track along the building so that incoming and outgoing materials can be readily handled.

**Baker Builds Model Garage**—The Baker Motor Vehicle Co., is erecting in Cleveland one of the most modern and completely equipped garages in the United States. The building is 200 by 162 feet, located on Euclid avenue, and built 50 feet back from the street. It will be occupied by the Baker Motor Vehicle Co.'s Cleveland salesrooms and the Standard Automobile Co., Cleveland distributor of the Packard. The building is of fireproof construction, the exterior being of the finest tapestry brick, made with a wide raked joint giving a very artistic appearance. The roof is of red-shingle tile. The Euclid avenue section will be devoted entirely to show rooms and offices, which will be finished in oak with paneled walls. Two garages, one for gasoline cars and one for electrics, with repair shops for each, battery department, paint-

ing and upholstering shops will be operated in connection. The garages will have a storage capacity of at least eighty electrics and thirty gasoline cars.

**Eisemann Announcement**—The Eisemann Magneto Co. announces that it has purchased from Lavalette & Co. their patent rights, trade marks and stock of ignition apparatus, and that hereafter the Eisemann magneto will be marketed direct by the manufacturer.

**W. T. Lewis Going Abroad**—The Mitchell-Lewis Motor Co. of Racine, Wis., has started work on the special model S six-cylinder cross-country car to be used by William T. Lewis, chairman of its executive board, in his tour of Europe and Asia with Mrs. Lewis. It will be ready May 1 and will be shipped to the continent in advance.

**Franklin Election**—At the annual meeting of the H. H. Franklin Mfg. Co., held at the company's factory in Syracuse, the following directors were re-elected H. H. Franklin, E. H. Dann, John Wilkinson, G. H. Stilwell, A. T. Brown, W. C. Lipe and F. A. Barton. The directors re-elected the following officers: President, H. H. Franklin; vice-president, G. H. Stilwell; secretary and treasurer, F. A. Barton.

**Will Rebuild at Racine**—It has been definitely settled upon that the Racine Mfg. Co. of Racine, Wis., which suffered a loss to its plant by fire on December 12, will rebuild in Racine. The first move is the filing of an amendment to the articles of incorporation increasing the capital stock to \$400,000 from \$50,000. Racine and Milwaukee capital has been interested in the new issue. Contracts have been awarded for the first new building, to be completed May 1. L. E. J. Gittings, formerly associated with the J. I. Case Threshing Machine Co. of Racine, becomes treasurer of the company. F. F. Blandin remains as president; and George Jaegers as secretary and general manager. The company now is in temporary quarters, employing 600 of the original force of

1,200 men, and more than 4,000 bodies are now being finished. The company will confine its efforts to the manufacture of motor car bodies.

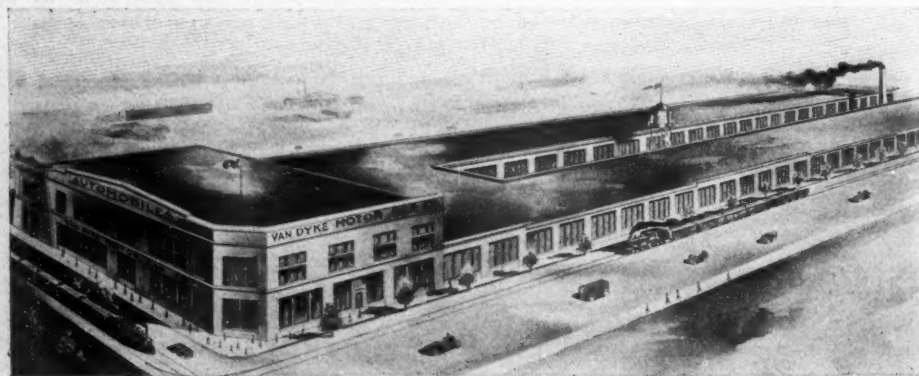
**Rumor Denied**—A denial is made by the Sheldon Axle Co., of Wilkes-Barre, Pa., of the rumor that it will manufacture motor cars. The company states that bonds to the amount of \$200,000 will be issued to increase its facilities for the manufacture of springs and axles.

**Another General Motors Deal**—Plans have been made by the General Motors Co. for greatly enlarging the plant of the Jackson-Church-Wilcox Co., which it purchased a few months ago. When completed the new factory will employ 2,000 men. The company now has an option on an entire block of property adjoining the present plant and this option will be closed. The General Motors Co. now employs about 300 men in the Jackson-Church-Wilcox plant, turning out parts largely for its Flint factory.

**After Monitor Plant**—Business men of Janesville, Wis., have started to raise the stock subscription fund required by the Monitor company of Chicago as a condition of removal to Janesville. A block of \$50,000 of stock will be distributed in Janesville by a committee consisting of M. O. Mouat, Sanford Soverhill and Frederick Beilhart.

**Toledo Dealers Elect**—The Toledo Automobile Dealers' Association held its first annual meeting last week, and selected the following officers for the ensuing year: President, A. A. Atwood; vice-president, W. H. McIntyre; treasurer, E. A. Kirk; secretary, A. W. Norris. These, with J. G. Swindeman, J. W. Banting and B. O. Gamble, constitute the directorate. There are in Toledo only about nine dealers who are not members of the organization and these were extended a unanimous invitation to come in. The matter of holding a spring show was discussed and practically agreed upon, but no definite action was taken.

**Change of Name**—In accordance with its policy, and also to the fact that the company has outgrown its local name, the York Motor Car Co., of York, Pa., recently applied to the courts for a change of name, which has been granted, and from now on the company will be known as the Pullman Motor Car Co., Inc. The company is behind in its orders, but with the completion of an additional plant at Evansville, Ind., in the early summer, the output will be greatly increased, and the company will be prepared to meet this demand. The officers and personnel of the new company remain the same. The change, as previously stated, is made so as to harmonize more with the



FIRST OF THREE FACTORY BUILDINGS TO BE BUILT BY VAN DYKE MOTOR CAR CO., DETROIT



character of its output and to avoid the confusion which would necessarily result after the establishment of the plant at Evansville, Ind.

**Packard Agency Moves**—The Chicago Motor Car Co. took advantage of show week to move from its temporary quarters to its new building at Michigan avenue and Twenty-fourth street, Chicago, which henceforth will be the home of the Packard.

**Not Making Trades**—The American Simplex Co., whose salesrooms are located at 261 Dartmouth street, Boston, is said to be the first concern in the Hub to make the announcement that after March 1, 1910, it will not take any more cars in trade in part payment on a sale of its new product, the American Simplex car.

**Luxury Seats Patented**—A patent has been allowed to the Graves & Congdon Co., Amesbury, Mass., on its Luxury auxiliary seats. Two of the distinctly valuable features of the Luxury seats are the dovetail socket which supports the seat bracket and the feature of construction which makes it easy to swing around in the seats when they are in use.

**New Job For Trego**—Frank H. Trego, secretary of the Chicago Motor Club and the Illinois State Automobile Association, has accepted the position of manager of the technical department of the Hudson Motor Car Co., of Detroit, a department which has been only recently organized, and the duties of which are to look after the cars after they have gone into the hands of the owners.

**New Branch Completed**—The new salesrooms and service depot of the Studebaker company at the corner of Lawton and Cummington streets, Boston, have been completed and the place is occupied now. It comprises two stories and a basement, giving a total of 26,000 square feet. The building is of reinforced concrete and the floors will carry a load of 150 pounds per square foot. One of the noticeable features is the large number of windows, flooding the interior with light. There is accommodation there for 200 cars and with entrances on two streets machines may be moved in and out freely. The basement

is above the ground level on two sides and 90 cars may be cared for there. At one end are the charging panels and the other end the battery department.

**Overland Shipments**—Sales Manager Barker, of the Willys-Overland Co., states that President Willys was misquoted in saying that the company was only shipping fifteen or twenty cars a day. Mr. Barker declares that orders are coming in at the rate of sixty cars a day and that shipments are being made accordingly.

**First Car Is Out**—The first motor car to be produced by the Racine-Sattley Co. of Racine, Wis., carriage builders, is being exhibited at the national show in Chicago this week. It had been decided to exhibit only motor car bodies, a recent product of the company, because it was not believed possible for the entire car to be completed.

**Making the Wisco**—The Wisconsin Carriage Co., of Milwaukee, Wis., following the example of other manufacturers of carriage, has organized the Wisconsin Motor Car Co. and is placing on the market a popular-priced four-cylinder 35-horsepower car which will be known as the Wisco. Selling territories are being allotted to representatives now.

**Opens Napier Branch**—Motorists will be interested to learn that the British Napier motor cars are now obtainable at an American branch at 47 Union avenue, Jamaica Plain, Boston, Mass. The Napier rights were at one time held by a firm in Boston, but it is now out of business. A. N. Perry is branch manager, having come direct from the English offices.

**Plans Branch Shows**—Each of the twelve branches of the Franklin Automobile Co. will have an exhibit this season at the show of the city in which it is located. The San Francisco branch was the first to exhibit the Franklin motor cars for 1910, the show having been held October 16-23. The Madison Square garden show in New York, where the Franklin company has a branch at Seventy-third street, Broadway and Amsterdam avenue, was recently held. Other branches with the date of the shows are as follows: Chicago, February 5-12; Rochester, February 14-19; Buffalo, Febru-

ary 14-19; St. Louis, February 14-21; Cleveland, March 5-12; Cincinnati, February 21-26; Boston, March 5-12; Albany, March 7-12; Syracuse, March 12-19; Pittsburgh, March 26-April 2.

**Doubling Its Capacity**—The Emergency Forge Co. of Lansing, Mich., will double its capacity and, as a beginning will place orders for more hammers of the largest type. The new equipment calls for an outlay of \$27,000.

**Grout Branch in Boston**—The Grout Automobile Co. of Orange, Mass., has reopened a branch in Boston in the motor mart in the same quarters where the Grout formerly was handled by Curtis & Hawkins. The latter firm moved recently to a new location and the Grout company lost no time in moving in. E. P. Forbes is manager of the branch.

**Will Make Engines**—The Falls Machine Co. of Sheboygan, Wis., has increased its capital stock from \$15,000 to \$150,000 for the purpose of engaging in the manufacture of gasoline engines for motor cars on an extensive scale. The greater part of the production has been contracted for by the Warren Motor Car Co. of Detroit. Angelo R. Clark has assumed a large interest in the company and at the reorganization meeting was elected secretary. Gustav Huette was elected president, the other officers being: Vice-president, Albert Leicha; treasurer, Walter Koehn. Additions and improvements necessary for the increased production are about to be made.

**Courtright Interested**—Victor Courtright, for the past 3 years associated with the Motor Car Supply Co., of Chicago, has severed his connection with this company to become president of the Auto Sales Co., a corporation organized under the laws of the state of Illinois, with a paid-up capital of \$10,000. The incorporators and directors are: H. S. Hawley; Victor Courtright, president; E. H. Bell, secretary and treasurer; Charles P. Cogswell, vice-president. This company was formed for the purpose of promoting the sale of a commercial vehicle manufactured by the Economy Motor Car Co., of Joliet, Ill. It will occupy the three-story building at 2447 Michigan avenue.



ARCHITECT'S PLAN OF THE NEW ELECTRIC GARAGE OF BAKER COMPANY AT CLEVELAND, O.

# Brief Business Announcements

**Hartford, Conn.**—The Pope Mfg. Co. is planning to spend about \$150,000 in the enlargement of its plant.

**Buffalo, N. Y.**—John Lehman, of 83 Grant street, is to erect a one-story garage at 40 West Seneca street.

**Hartford, Conn.**—George D. Knox has been appointed representative in Hartford and Tolland counties for the Hudson.

**Brooklyn, N. Y.**—The Peerless Garage and Sales Co. is preparing to open its new establishment at 1523-1525 Bedford avenue.

**Nashville, Tenn.**—F. O. Draughton has opened a shop at Broad and 7th avenue, under the name of the Standard Motor Car Co.

**Hartford, Conn.**—A. E. Peard, of Kinsley street, who for several years has been agent for the Overland car, has given up the agency and will close his salesroom.

**Brooklyn, N. Y.**—The Mitchell Motor Co. has found its business increasing so rapidly that it has found it necessary to erect a new salesroom, repair shop and garage, to be located at 24-26 Kosciusko street.

**Philadelphia, Pa.**—The Krit Sales Co., organized with W. D. Shepherd as president and Thomas W. Pritchard as secretary and treasurer, has established salesrooms at 205 North Broad street, and will represent the new Krit.

**Detroit, Mich.**—The Watt Motor Co. is preparing to erect a new plant. The company purchased 10 acres of land in the township of Hamtramck, and will put up their plant in that township. The concern has a contract for 600 machines, to be delivered by September.

**Philadelphia, Pa.**—The Auto Sales Corporation is shortly to begin work on the erection of a new building at 142-144 North Broad street. The company has the local representation for the Peerless and Cadillac, and will make its headquarters for the present at 138 North Broad street.

**Yoakum, Tex.**—R. C. Flicke, of Cuero; A. Miller and E. Herder, both of this city, and C. H. Snell, of San Antonio, have formed a partnership and will run a general buggy, harness, motor car and hardware business in this city. They have rented the Wangeman building, on Grand avenue.

**Utica, N. Y.**—The Bossert Electrical Co. is planning to reorganize about the last of February and will increase the capital stock to \$150,000. The plant on Hickory street is being enlarged and a change will be made in the articles manufactured, it being the intention of the company to go into a general steel stamping business, making a specialty of motor

car parts. Francis K. Kernan is the president of the company and Nellis M. Crouse secretary and treasurer.

**Youngstown, Ohio**—Frank B. Smith and Will Morgan, who are the agents here for the Buick, have opened a garage on East Boardman street.

**Verona, N. J.**—E. E. Taylor, of Cedar Grove, is planning to establish a motor transportation line from Cedar Grove to Bloomfield avenue, Verona.

**New Orleans, La.**—The Fairchild Auto Co., of 840 Baronne street, which already represents the Raunch & Lang, has accepted the agency for the Winton car.

**New Orleans, La.**—Abner Powell, who is the agent in this city for the White and the Hupmobile, reports that work is progressing rapidly on his new garage on Canal street.

**Sacramento, Cal.**—John Latourette, C. A. Fical and Warren D. Scovill have formed a partnership and are to conduct a garage, as well as run a plumbing and tinning business. The garage is to be located at Oak Park.

**New Orleans, La.**—The Louisiana Motor Car Co. is to start in business in this city. The members of the new concern are G. W. Hunter, of Chicago, and T. S. Davies, of Detroit. They have leased a new building, which is to be erected at 745 Baronne street, and will occupy it for at least 3½



**Chicago**—Crescent Garage Co., capital stock \$100,000, to operate a livery and garage; incorporators, F. D. Moone, C. D. Fuller and H. L. Fuller.

**Kansas City, Mo.**—Walden W. Shaw Auto Livery Co., capital stock \$100,000; incorporators, E. N. D'Ancona, H. H. McCormick.

**Bridgeport, Conn.**—Royal Engine Co., capital stock \$50,000, to manufacture marine and motor car engines; incorporators, F. I. Prentice, A. F. Law and H. N. Law.

**Lafayette, Ind.**—Hoffman-Moore Auto Co., capital stock \$10,000, to deal in motor cars; incorporators, A. E. Hoffman, W. W. Hoffman and S. C. Moore.

**Albany, N. Y.**—Hatfield Co., of Cornwall-on-the-Hudson, capital stock \$125,000, to manufacture, deal in and repair motor cars. Incorporators, D. H. McConnell, G. C. Brown and G. W. Blanchard.

**New York**—C. and G. Auto Co., capital stock \$10,000; Herbert F. Lee and T. F. Phillips, both of Brooklyn, are named as directors.

**Chicago**—Charles Lange & Brothers Co., capital stock \$5,000, to manufacture vehicles and motor cars. Incorporators, Alvah H. Martin, A. C. Gresen and A. Pinger.

**Chicago**—H. Peters Co., capital stock \$8,000, to manufacture harness, saddlery and motor car supplies; incorporators, M. Peters, W. F. Peters and W. E. Peters.

**New York**—Belnord Automobile Storage and Supply Co., capital stock \$10,000, to operate storage houses and garages, deal in rubber tires, etc.; incorporators, I. I. Cohn, H. M. Flateau and J. Marx.

**San Antonio, Tex.**—Citizen Auto Co., capital \$35,000; incorporators, A. H. Jones and W. E. Lupe.

years. They will have no garage, only a salesroom and storage department, and will represent the E-M-F and Flanders.

**Lansing, Mich.**—The Tourists' Auto Co., of Detroit, has filed articles of incorporation, with a capital stock of \$5,500.

**Memphis, Tenn.**—The Blomberg Automobile Co., which was recently organized, is erecting a large garage at 415 Monroe avenue.

**Lansing, Mich.**—Notice has been given by the Watt Motor Co., of Detroit, of the increase of its capital from \$100,000 to \$300,000.

**Philadelphia, Pa.**—George W. Brownlee, president of the Tioga Auto Co., of Broad and Tioga streets, has been appointed local representative for the Hupmobile.

**Philadelphia, Pa.**—In the future the Krouse Motor Car Co., of Broad and Wood streets, which has been making a specialty of dealing in second-hand cars, will act as agents for the Halladay.

**Fort Worth, Tex.**—Nickels & Edwards, who have been located on South Akard street, have leased the property on East Main street, between Fourth and Fifth streets, Dallas, and will open the only exclusively electric garage in this state.

**Utica, N. Y.**—The Crist Motor Car Co., agent in this city for the Overland, Pullman and Winton cars, have leased the store at 29-31 John street and will move in there as soon as the necessary alterations have been completed.

**Fort Wayne, Ind.**—Alex H. Boyd, who has been the electrical engineer in charge of the motor sales department of the Fort Wayne Electrical Works, has been appointed manager of the Philadelphia branch of the Fort Wayne Co.

**Philadelphia, Pa.**—The McCord Machine Co., which has been located at 1627 Brandywine street, has found its business increasing to such an extent that it has been obliged to look for a larger plant, and has removed to 2231 Brandywine street.

**Boston, Mass.**—The Hudson-Colby Co., which is to make a specialty of repair work, is now located in the former quarters of the French Carriage Co. at 28-32 Scotia street. G. H. Hudson, formerly connected with the French Carriage Co., is to act as treasurer of the company.

**Norfolk, Va.**—The Tidewater Automobile and Garage Co. is planning the erection of a one-story garage and store at Boush and Tazewell street. The new building is to cost \$6,000, and will be erected on land leased for 5 years from G. J. Upton. C. P. Weston is the president and treasurer of the concern, and G. F. Burke vice-president and secretary.